# Vol. I

# TRANSCRIPT OF RECORD

## Supreme Court of the United States

OCTOBER TERM, 1943

## No. 54

THE MERCOID CORPORATION, PETITIONER,

vs.

MID-CONTINENT INVESTMENT COMPANY AND MINNEAPOLIS HONEYWELL REGULATOR COMPANY.

## No. 55

THE MERCOID CORPORATION, PETITIONER,

vs.

MID-CONTINENT INVESTMENT COMPANY AND MINNEAPOLIS HONEYWELL REGULATOR COMPANY.

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

PETITION FOR CERTIORARI FILED APRIL 29, 1944.

CERTIORARI GRANTED JUNE [illegible], 1944.

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## TRANSCRIPT OF RECORD

IN THE

# Supreme Court of the United States

OCTOBER TERM, A. D. 1942.

No.

THE MERCOID CORPORATION,

*Petitioner,*

*vs.*

MID-CONTINENT INVESTMENT COMPANY, A CORPORATION; AND MINNEAPOLIS-HONEYWELL REGULATOR COMPANY,

*Respondents.*

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

THE QUINN & BODEN COMPANY, RAHWAY, N. J.

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In the

# United States Circuit Court of Appeals

## For the Seventh Circuit

MID-CONTINENT INVESTMENT COMPANY, A CORPORATION, AND MINNEAPOLIS-HONEYWELL REGULATOR COMPANY,

*Plaintiffs-Appellants,*

No. 8008.

*vs.*

THE MERCOID CORPORATION,

*Defendant-Appellee.*

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MID-CONTINENT INVESTMENT COMPANY, A CORPORATION, AND MINNEAPOLIS-HONEYWELL REGULATOR COMPANY,

*Plaintiffs-Appellees,*

No. 8009.

*vs.*

THE MERCOID CORPORATION,

*Defendant-Appellant.*

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Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

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THE BLAKELY PRINTING COMPANY, 350 WEST JACKSON, CHICAGO

TRANSCRIPT OF RECORD FILED MAY 14, 1942.

# In the
# United States Circuit Court of Appeals
## For the Seventh Circuit

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MID-CONTINENT INVESTMENT COMPANY, A CORPORATION, AND MINNEAPOLIS-HONEYWELL REGULATOR COMPANY,

*Plaintiffs-Appellants,*

**No. 8008.** *vs.*

THE MERCOID CORPORATION,

*Defendant-Appellee.*

---

MID-CONTINENT INVESTMENT COMPANY, A CORPORATION, AND MINNEAPOLIS-HONEYWELL REGULATOR COMPANY,

*Plaintiffs-Appellees,*

**No. 8009.** *vs.*

THE MERCOID CORPORATION,

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1 Pleas in the District Court of the United States for the Northern District of Illinois, Eastern Division, begun and held at the United States Court Room, in the City of Chicago, in said District and Division, before the Honorable Michael L. Igoe, District Judge of the United States for the Northern District of Illinois on 26th day of January, in the year of our Lord one thousand nine hundred and forty-two, being one of the days of the regular December Term of said Court, begun Monday, the 15th day of December, and of our Independence the 166th year. Placita.

Present:

Honorable Michael L. Igoe, District Judge.
William H. McDonnell, U. S. Marshal.
Hoyt King, Clerk.

Filed Sept. 10, 1940.

2 IN THE DISTRICT COURT OF THE UNITED STATES

Northern District of Illinois,

Eastern Division.

Mid-Continent Investment Company, a corporation, *Plaintiff*,
*vs.*
The Mercoid Corporation, *Defendant*.
} No. 2070.

Be It Remembered, that the above-entitled action was commenced by the filing of the following Bill of Complaint in the above-entitled cause, in the office of the Clerk of the District Court of the United States for the Northern District of Illinois, Eastern Division, on this the 10th day of September, A. D. 1940.

3 IN THE UNITED STATES DISTRICT COURT.

(Caption—2070)

## BILL OF COMPLAINT.

Plaintiff brings this complaint and alleges:

1. Mid-Continent Investment Company, the plaintiff, is a corporation organized under the laws of the State of Missouri and maintains an office and place of business in Kansas City, Jackson County, Missouri.

2. The defendant is The Mercoid Corporation, a corporation organized under the laws of the State of Delaware and maintains an office and place of business at 4201 West Belmont Avenue, Chicago, Cook County, Illinois.

3. This action arises out of and under the patent laws of the United States for direct and contributory infringement of United States Letters Patent No. 1,758,146 by the defendant within the United States District for the Northern District of Illinois, Eastern Division.

4. On May 13, 1930 United States Letters Patent No. 1,758,146 was duly and legally issued to Walter M. Cross,

Jr. of Kansas City, Missouri, for an invention in improvements in domestic heating systems.

4 5. All the right, title and interest to United States Letters Patent No. 1,758,146, together with all exclusive rights, privileges and accrued causes of action, are now vested solely and exclusively in the plaintiff by virtue of written instruments duly executed, acknowledged and delivered as required by law.

6. The defendant, within the jurisdiction of this Court and elsewhere in the United States, for a long time past, has been and still is infringing said Letters Patent by making and selling devices capable of and intended for use in heating systems embodied in said patented invention for the purpose of enabling purchasers to make such infringing heating systems, to the damage of the plaintiff, and will continue to do so unless enjoined by this Court.

7. The issues of validity of said Letters Patent and of infringement of said Letters Patent by heating systems employing defendant's equipment are res adjudicata in this proceeding by virtue of their having been adjudicated in a proceeding in the United States District Court for the Southwestern Division of the Western District of Missouri, entitled, Mid-Continent Investment Company *vs.* E. O. Smith, wherein the defense of Smith was conducted by the attorney for and at the expense of The Mercoid Corporation, defendant herein. The United States District Court for the Southwestern Division of The Western District of Missouri found that Patent No. 1,758,146 was

5 valid and infringed by heating systems employing equipment made by the present defendant, and this finding was affirmed by the Circuit Court of Appeals for the Eighth Circuit. A copy of the finding of fact and conclusions of law of the trial court is attached hereto as Exhibit A; a copy of the final decree as Exhibit B; and a copy of the mandate of the United States Circuit Court of Appeals of the Eighth Circuit, affirming without modification the decision of the District Court, as Exhibit C.

8. Direct infringers of the said Letters Patent number hundreds and are so distributed throughout the United States as to render it impossible for the plaintiff to protect his rights as provided under the patent laws of the United States without bringing a multiplicity of suits involving substantially identical issues.

9. The plaintiff and its licensees has placed the required statutory notice on all equipment manufactured and sold

by it under said Letters Patent, and has given written notice to defendant of said infringement.

10. The plaintiff has been specially damaged in that defendant's deliberate conduct has caused certain of plaintiff's licensees under the aforesaid patent to cancel license agreements with a resulting loss of royalties.

11. The defendant has wantonly and wilfully damaged the plaintiff by conduct deliberately calculated to destroy plaintiff's patent position with other competitors in the field.

12. By reason of defendant's infringing plaintiff's rights under said patent the plaintiff has suffered and
6 is continuing to suffer great and irreparable damage and is losing proceeds, profits and other advantages which would otherwise accrue to it.

Wherefore, plaintiff demands a preliminary and final injunction against further infringement by the defendant and those controlled by the defendant, an accounting for profits and damages on all devices capable of use in infringing heating systems and sold by the defendant from that time commencing six years prior to the filing of the suit identified in paragraph 7, including special damages and triple damages, and an assessment of costs against the defendant.

Mid-Continent Investment Company,
By Spencer, Marzall, Johnston & Cook,
By Spencer, Marzall, Johnston & Cook,
135 South La Salle Street,
Chicago, Illinois

Of Counsel:
Richard Spencer
Richard Spencer
135 South La Salle Street
Chicago, Illinois

7 And on, to wit, the 7th day of October, A. D. 1940 came the defendant by its attorneys and filed in the Clerk's office of said Court its certain Motion for a Bill of Particulars, in words and figures following, to-wit:

8 IN THE DISTRICT COURT OF THE UNITED STATES. Filed Oct. 7, 1940
• • (Caption—2070) • •

## DEFENDANT'S MOTION FOR A BILL OF PARTICULARS.

Now comes The Mercoid Corporation, the defendant in the above entitled cause, before filing answer to plaintiff's bill of complaint, and moves that the plaintiff herein, Mid-Continent Investment Company, be ordered to furnish a more definite statement of the matters set up in paragraphs 6, 8, 9, 10 and 11 of the bill of complaint as the averments in the said paragraphs are of such a general nature that they are not expressed with sufficient definiteness or particularity to enable the defendant properly to prepare its answer to the bill of complaint, and moves for an order for a bill of particulars under Rule 12(e), "Rules of Civil Procedure", as to the following matters alleged herein.

The Cross patent in suit No. 1,758,146, entitled "Domestic Heating Systems" was granted May 13, 1930 upon an application filed November 11, 1926 and contains five claims, claims 1, 2 and 3 each specifying the invention defined
9 thereby as "a heating system", claim 4 specifies the invention defined thereby as "a domestic heating plant", and claim 5 specifies the invention defined thereby as "a forced draft furnace for a heating system".

The Mercoid Corporation, the defendant herein, and its predecessor in business, The Federal Gauge Company, have been engaged in the manufacture and sale of pressure responsive and temperature responsive electric switches, adapted to be connected in circuit with electrically operated fuel feeding means, since September 20, 1921.

Neither the defendant nor its predecessor in business have ever engaged in the business of manufacturing and selling domestic heating systems, nor domestic heating plants, nor forced draft furnaces for heating systems.

Within the past six years defendant has sold its pressure and temperature responsive switches to the manufacturers of heating systems, domestic heating plants and forced draft furnaces for heating systems of the steam, hot water and warm air type fired by coal, oil or gas by electrically operated means. Defendant within the past six years has not offered by advertising to install, nor has

its employees installed, its pressure or temperature responsive electric switches in circuit with electrically operated fuel feeding means.

10 Defendant in its catalogue No. 400, Prices Effective February 1, 1940, illustrates and describes approximately one hundred different forms of pressure or temperature responsive electric switches adapted to be connected in circuit with electrically operated fuel feeding means.

Therefore, defendant moves that:

1. The plaintiff be required to specify which of the five claims of the patent in suit are alleged to be infringed by defendant.

2. The plaintiff be required to state the location of a heating system, a domestic heating plant or a forced draft furnace specifying the location by name of owner or occupant of premises, street number of premises, city and state of premises, wherein such installation or installations were made by defendant.

3. The plaintiff be required to specify devices made by defendant capable of and intended for use in heating systems defined by the claims of the patent in suit, as alleged in paragraph 6 of the bill of complaint, by name and identification numbers or letters used by defendant and indicate the page where such devices are illustrated or described in defendant's catalogue No. 400, a copy of which is attached hereto.

4. The plaintiff be required to specify the manner in which defendant enables purchasers of its devices to make heating systems in infringement of the patent in suit, as alleged in paragraph 6 of the bill of complaint.

11 5. The plaintiff be required to specify the names and addresses of its licensees who have placed the required statutory notice on all equipment manufactured and sold under the patent in suit, as alleged in paragraph 9 of the bill of complaint.

6. The plaintiff be required to furnish the defendant with copies of the licenses granted to the licensees as alleged in paragraph 9 of the bill of complaint.

7. The plaintiff be required to specify the names and addresses of such licensees under the patent in suit who have cancelled such license agreements as alleged in paragraph 10 of the bill of complaint.

8. The plaintiff be required to specify the plaintiff's

"patent position with other competitors in the field," alleged to be damaged by defendant as set forth in paragraph 11 of the bill of complaint.

9. The plaintiff be required to specify in what manner and by what acts defendant has destroyed plaintiff's "patent position with other competitors in the field" as alleged in paragraph 11 of the bill of complaint.

10. The plaintiff be required to specify the names and addresses of the "other competitors" in the field as alleged in paragraph 11 of the bill of complaint.

11. The plaintiff be required to specify by name and
12 address "those controlled by the defendant" against whom plaintiff demands a preliminary and final injunction.

The Mercoid Corporation,
By Langdon Moore,
53 West Jackson Boulevard,
Chicago, Illinois,
*Its Attorney.*

13 And on, to wit, the 8th day of October, A. D. 1940 came the Plaintiff by Its attorneys and filed in the Clerk's office of said Court Its certain Bill of Particulars in words and figures following, to wit: Filed Oct. 8, 1940.

14 IN THE UNITED STATES DISTRICT COURT.
* * (Caption—2070) * *

## BILL OF PARTICULARS.

The plaintiff, for its Bill of Particulars, answers the enumerated paragraphs of the Motion For A Bill of Particulars excepting paragraphs 6 and 10 as follows:

In response to enumerated paragraph 1:

1. The plaintiff relies upon claims 1 to 5 inclusive of the patent in suit which said claims were adjudicated valid and infringed by the United States District Court for the Southwestern Division of the Western District of Missouri and affirmed by the Circuit Court of Appeals for the Eighth Circuit in the suit entitled "Mid-Continent Investment Co. *vs.* E. O. Smith" and which said suit was defended by the defendant herein.

In response to enumerated paragraph 2:

2. A domestic heating plant owned by E. O. Smith

located at 102 Howard Street, Carthage, Missouri, was found by said United States District Court and said Circuit Court of Appeals to contain controls made by the defendant which installation infringed the plaintiff's patent.

15 In response to enumerated paragraph 3:

3. Such devices as those manufactured by the defendant and used in the E. O. Smith furnace system at Carthage, Missouri, designated as Mercoid M51, Serial No. 51,517 and Mercoid M61, Serial No. M54,806 on page 40 of the record in said suit, together with such other devices as defendant may be manufacturing or has manufactured for similar or equivalent use, as, for example, Type M-53SW "Out Fire Stoker Control" set out on page 38 of the Mercoid "Automatic Controls, Catalogue No. 400," attached to the Motion For A Bill of Particulars. This identification of Type M-63SW Out Fire Stoker Control does not preclude the presence of other equipment, as, for example, the "Type JMV Mercoid Stokotherm" shown on page 38 of said catalogue or of other equipment sold during the accounting period by the defendant for use in installations infringing plaintiff's patent.

In response to enumerated paragraph 4:

4. By advertising and offering for sale control devices intended to be used in heating systems which constitute direct infringements of the patent here in suit.

In response to enumerated paragraph 5:

5. The Minneapolis Honeywell Corporation of Minneapolis, Minnesota.

In response to enumerated paragraph 7:

7. The Detroit Lubricator Company of Trumbull, Lincoln, Marquette and Viaduct Streets, Detroit, Michigan.

16 In response to enumerated paragraph 8:

8. Plaintiff's patent position with other competitors at the present time consists principally of a licensing agreement between plaintiff and Minneapolis Honeywell Corporation. A license once existing between plaintiff and the Detroit Lubricator Company was cancelled due to defendant's infringing activities in the field.

In response to enumerated paragraph 9:

9. By wanton violation of the patent rights of the plaintiff as alleged in the Bill of Complaint.

In response to enumerated paragraph 11:

11. Plaintiff is without knowledge of defendant's corporate structure or of its corporate subsidiaries.

Mid-Continent Investment Co.,
By Spencer, Marzall, Johnston & Cook,
Spencer, Marzall, Johnson & Cook,
135 South La Salle Street,
Chicago, Illinois.
Richard Spencer,
Richard Spencer,
135 South La Salle Street,
Chicago, Illinois.

Received a copy of the foregoing this 8th day of October, 1940.

Langdon Moore, per F. E. H.,
*Attorney for Defendant.*

17 And on, to wit, the 18th day of November, A. D. 1940, came the Defendant by its attorneys and filed in the Clerk's office of said Court its certain Answer, in words and figures following, to wit: Filed Nov. 18, 1940.

18 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—2070) * *

## DEFENDANT'S ANSWER TO PLAINTIFF'S BILL OF COMPLAINT.

Defendant, The Mercoid Corporation, for answer to the complaint filed in the above-entitled cause says:

1. Defendant admits the allegations contained in paragraphs 1 and 2 of the bill of complaint.

2. Defendant admits the jurisdiction of this Court, but denies that it has infringed or contributed to the infringement of the Letters Patent No. 1,758,146, within this jurisdiction or elsewhere within the United States.

3. Defendant denies the allegations contained in paragraph 4 of the bill of complaint that Letters Patent No. 1,758,146 was duly and legally issued to Walter M. Cross, Jr.

4. Defendant has no knowledge as to the matter contained in paragraph 5 of the bill of complaint and, therefore, leaves plaintiff to its proofs thereof.

5. Defendant denies each and every allegation contained in paragraph 6 of the bill of complaint and, therefore, leaves plaintiff to its proofs thereof.

6. Defendant admits the adjudication of the Letters Patent No. 1,758,146, as contained in paragraph 7 of the bill of complaint, but denies that this adjudication is res adjudicata against the defendant and defendant further denies this defendant has infringed or contributed to the infringement of said Letters Patent and, therefore, leaves plaintiff to its proofs thereof.

7. Defendant has no knowledge of the matter contained in paragraphs 8, 9 and 10 of the bill of complaint, and, therefore, leaves plaintiff to its proofs thereof, except that defendant admits receiving a written notice alleging infringement as set forth in paragraph 8 of the bill of complaint, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit A".

8. Defendant denies each and every allegation contained in paragraph 11 of the bill of complaint and, therefore, leaves plaintiff to its proofs thereof.

9. Defendant denies each and every allegation contained in paragraph 12 of the bill of complaint and, therefore, leaves plaintiff to its proofs thereof.

10. Defendant, further answering the bill of complaint, avers that the defendant and its predecessor in business, The Federal Gauge Company, manufactured and sold pressure and temperature responsive electric switches, adapted to be connected in circuit with electrically operated fuel feeding means long prior to November 2, 1932, and that plaintiff was fully acquainted with the actions of defendant complained of herein long prior to the date of its notice of infringement to defendant dated November 21, 1932, defendant's "Exhibit A", and plaintiff has forfeited any and all rights it may have had to enforce said Letters Patent No. 1,748,146, against defendant on the ground of laches.

11. Defendant, further answering the bill of complaint, avers that plaintiff, after notifying defendant in 1932 of the alleged infringement of said Letters Patent No. 1,758,146, wilfully and in bad faith delayed instituting suit for infringement until defendant's customers "number hundreds and are so distributed throughout the United States as to render it impossible for the plaintiff to protect his rights as provided under the patent laws of the

United States without bringing a multiplicity of suits involving substantially identical issues," as set up in paragraph 8 of the bill of complaint. Therefore, defendant avers plaintiff is estopped from obtaining the equitable relief prayed in its bill of complaint.

12. Defendant, further answering the bill of complaint, avers that the devices capable of and intended for use in heating systems manufactured by the defendant alleged to infringe and contribute to the infringement of said Letters Patent No. 1,758,146 are made and sold by the defendant under a license and in accordance with the disclosure and claims of Letters Patent granted to Ira E. McCabe, which license was recorded on April 21, 1922, Liber w 116, page 12 of the Transfers of Patents, U. S.
21 Patent Office, and defendant further avers that the Mercoid devices capable of and intended for use in heating systems were on the market and offered for sale long prior to the filing date of the application of said Letters Patent No. 1,758,146.

13. Defendant, further answering, avers plaintiff in utilizing the Cross patent No. 1,758,146 to establish a monopoly in the sale of devices per se capable of and intended for use in heating systems, which devices do not come within the boundaries of the said Cross patent.

14. Defendant, further answering, avers plaintiff is seeking to exercise its patent monopoly under said Cross patent No. 1,758,146 so as to effect a limited monopoly in the sale of devices capable of and intended for use in heating systems whereby plaintiff seeks to derive its profits not from the invention claimed in the patent in suit, but from mechanism unpatented per se by the plaintiff, and hence, plaintiff should be refused the aid of this Court.

15. Defendant, further answering, avers, on information and belief, that plaintiff's method of doing business has the purpose of doing by indirection what it could not do directly, i. e., the securing of a monopoly in the manufacture and sale of devices which are capable of and intended for use in heating systems but do not come within the boundaries of said Cross patent owned by plaintiff, and plaintiff, therefore, is asserting a monopoly not warranted by its patent and is not entitled to the relief
22 prayed for.

16. Defendant, further answering, denies that it has done any act or thing, or is doing any act or thing, and

proposes to do any act or thing, in violation of any alleged right, exclusive or otherwise, of plaintiff, or secured to plaintiff by Letters Patent, infringement of which is alleged in the bill of complaint, or that plaintiff is entitled to an injunction or to an accounting, or to any other relief prayed for in the bill of complaint.

Therefore, defendant prays:

That the bill of complaint be dismissed, and that defendant receive its costs in this behalf most wrongfully sustained, and any other and further relief as to this Court may seem meet and proper in the premises.

23 Defendant's Counterclaim.

Defendant sets forth and alleges the following as a counterclaim against the plaintiff herein, to wit:

17. Defendant, The Mercoid Corporation, is, as alleged in the bill of complaint, a corporation organized under the laws of the State of Delaware and maintains an office and place of business at 4201 Belmont Avenue, Chicago, Cook County, Illinois, within the Northern judicial district of Illinois; and, upon information and belief, plaintiff, Mid-Continent Investment Company, is, as alleged in the bill of complaint, a corporation organized under the laws of the State of Missouri, and maintains an office and place of business in Kansas City, Jackson County, Missouri.

18. The jurisdiction of this Court arises from the fact that an actual controversy which exists between plaintiff and defendant arises under the patent laws of the United States and arises further under the anti-trust laws of the United States.

19. Plaintiff avers that on May 1, 1930, United States Letters Patent No. 1,758,146 was duly and legally issued to Walter M. Cross, of Kansas City, Missouri, for an invention in improvements in domestic heating systems, and that all right, title and interest to United States Letters Patent No. 1,758,146, together with all exclusive rights,

24 privileges and accrued causes of action, are now vested solely and exclusively in the plaintiff by virtue of written instruments duly executed, acknowledged and delivered as required by law.

20. Plaintiff alleges and defendant denies that defendant, within the jurisdiction of this Court and elsewhere in

the United States, within the past six years, has been and still is infringing said Letters Patent by making and selling devices capable of and intended for use in heating systems embodied in said patented invention for the purpose of enabling purchasers to make such infringing heating systems, to the damage of the plaintiff, and will continue to do so unless enjoined by this Court.

21. Defendant avers that the plaintiff is not entitled to any equitable relief, as prayed in its bill of complaint, for the reasons set forth in paragraphs 10 to 16, inclusive, of the answer herein to which reference is made herewith the same force and effect as if each of said paragraphs thereof had been again set forth in full and that there is an actual controversy relative to the plaintiff's patent rights.

22. Defendant avers that conferences have been held between officers and representatives of plaintiff and defendant as shown by the letter from plaintiff to defendant dated February 5, 1940, a copy of which letter is attached hereto and made a part hereof as defendant's "Exhibit B". Later, plaintiff submitted to defendant a proposed license agreement in typewritten form, as shown by the letter from the plaintiff's attorney to defendant dated August 1, 1940, a copy of which letter is attached here-
25 to and made a part hereof as defendant's "Exhibit C" and a copy of said license is attached hereto and made a part hereof as defendant's "Exhibit D". The submission of the proposed license to the defendant is acknowledged by the defendant's letter of August 1, 1940, addressed to the plaintiff's attorney, a copy of which letter is attached hereto and made a part hereof as defendant's "Exhibit E".

23. Defendant avers that the devices as furnished by defendant to the trade capable of and intended for use in heating systems, charged to infringe the said Cross patent, include patented devices covered per se by the McCabe patents Nos. 1,734,015, 1,734,016, and 1,834,288, respectively, copies of which patents are attached hereto and made a part hereof as defendant's "Exhibit F-1," "Exhibit F-2," and "Exhibit F-3," respectively, and are furnished to the trade under said license from McCabe. The defendant's devices capable of and intended for use in heating systems charged to infringe the Cross patent in suit have been sold by defendant's predecessor in busi-

ness, The Federal Gauge Company, for use with other control devices in heating systems long prior to the filing date of the Cross patent in suit. The said devices are generally sold by the defendant to manufacturers and dealers of coal stokers, oil burners, gas burners and other heating apparatus. Defendant, The Mercoid Corporation, does not sell nor install complete heating apparatus in which its patented devices form a part.

24. Defendant avers that the license submitted to
26 defendant by plaintiff under the Cross patent, defendant's "Exhibit D," purports to convey a license under said patent No. 1,758,146 to make, use and/or sell products or articles for use in heating systems or plants of the type described and claimed in said patent, which products or articles are not claimed per se in said Cross patent.

25. Defendant, upon information and belief, avers that the plaintiff has granted to Minneapolis-Honeywell Regulator Company of Minneapolis, Minnesota, and to Detroit Lubricator Company of Detroit, Michigan, similar licenses to make, use and/or sell products or articles for use in heating systems or plants of the type described and claimed in said Cross patent No. 1,758,146.

26. Defendant avers that the products or articles for use in heating systems of the type described and claimed in said Cross patent No. 1,758,146 are not claimed per se in said Cross patent and the granting of such licenses to make, use and/or sell said products or articles under the Cross patent sets up a monopoly beyond the boundaries of said Cross patent.

27. Defendant avers that the products or articles for use in heating systems of the type described and claimed in said Cross patent No. 1,758,146, as defined in the license submitted by plaintiff to defendant, defendant's "Exhibit D," are not the invention of said Walter M. Cross and said products or articles as sold by defendant were sold by The
Federal Gauge Company, predecessor in business of
27 the defendant, for more than 15 years past.

28. Defendant avers that plaintiff with its licensees has wilfully planned to set up a monopoly in products or articles for use in heating systems in simulation of defendant's articles or products forming a part of defendant's and its predecessor's regular line of products offered to the trade under the guise of alleged patent protection under the said patent in suit.

29. Defendant avers that plaintiff has deliberately conspired with its licensees and they have wilfully and wrongfully conspired among themselves to substantially lessen competition and establish a monopoly in the sale of products or articles in simulation of the products and articles sold by the defendant and previously sold by its predecessor in business, The Federal Gauge Company, for more than 15 years past and by those unlawful acts have caused great injury to the business of the defendant and to the financial damage of the defendant.

30. Defendant avers that plaintiff has entered into unfair competition with defendant by granting licenses to others to make, use and/or sell products or articles defined in the proposed license, defendant's "Exhibit D," in words which describe all of the essential and non-essential features of the defendant's articles or products which defendant and its predecessor in business, The Federal Gauge Company, have illustrated and advertised for more than 15 years past at great expense and by careful manufacture have established a valuable good will and reputation for high grade controls, products or articles for use in heating systems.

31. Defendant avers that it and its predecessor in business, have been engaged in the manufacture and sale of controls, products or articles for use in heating systems since 1921, and have established a valuable good will and a high reputation for such articles and avers that the acts of plaintiff and its licensees in the unfair competition above complained of, have resulted in irreparable injury and damage to the defendant.

32. Defendant believes and therefore avers that Minneapolis-Honeywell Regulator Company advised the trade that it had obtained an exclusive license under the Cross patents Nos. 1,758,146 and 1,758,147 and defendant therefore avers that the plaintiff was not acting in good faith in submitting the proposed license from the plaintiff to the defendant, defendant's "Exhibit D."

33. Defendant upon information believes and therefore avers that Minneapolis-Honeywell Regulator Company advised the trade that it had obtained an exclusive license under the Cross patents Nos. 1,758,146 and 1,758,147 and in so doing stated that these patents do not cover individual controls as such, but rather, the system or method of preventing the extinguishment of the fire when operating

under low heat requirements by means of a system of control which is responsive to either the temperature of the combustion gases or the temperature of the water in the boiler and because these patents cover a system involving the controls and the stoker and not the controls alone, Minneapolis-Honeywell Regulator Company had worked out a special plan whereby a license under these patents could be granted by Minneapolis-Honeywell Regulator Company to the purchaser whereby the purchase of such individual controls, products or articles from Minneapolis-Honeywell Regulator Company for use in heating systems or plants of the type described and claimed in the said Cross patents Nos. 1,758,146 and 1,758,147 carried with each control, product or article so purchased a license of the entire stoker installation under one of said patents, thereby in bad faith attempting to create a monopoly in the sale of individual controls, products or articles not covered by the claims of the said Cross patents Nos. 1,758,146 and 1,758,147.

34. Defendant, upon information believes and therefore avers that Minneapolis-Honeywell Regulator Company announced by letters to manufacturers and dealers in automatic coal stokers and stoker-fed heating systems during the year 1938 that it had obtained an exclusive license under the Cross patents Nos. 1,748,146 and 1,758,147 and in so doing stated that these patents do not cover individual controls as such, but rather, the system or method of preventing the extinguishment of the fire when operating under low heat requirements by means of a system of control which is responsive to either the temperature of the combustion gases or the temperature of the water in the boiler and because these patents cover a system involving the controls and the stoker and not the controls alone, Minneapolis-Honeywell Regulator Company had worked out a special plan by which a license under these patents could be granted to the purchaser whereby the purchase of such individual controls, products or articles from Minneapolis-Honeywell Regulator Company for use in heating systems or plants of the type described and claimed in the said Cross patents Nos. 1,758,146 and 1,758,147 carried with each control, product or article so purchased a license of the entire stoker installation under one of said patents, and plaintiff did, preceding and subsequent to the time of said announcement of

Minneapolis-Honeywell Regulator Company, write letters to said manufacturers and dealers of automatic coal stokers and stoker-fed heating systems that plaintiff owned patents Nos. 1,758,146 and 1,758,147, the first of which covered a dual control in stoker operation providing for automatically regulating the fuel feeding means and at the same time, automatically maintaining the fuel bed to prevent extinguishment of the fire; that any method of using automatic control instruments for preventing extinguishment of fire, if such control is actuated by a pre-determined minimum temperature for said combustion space for preventing extinguishment of the fire when operating under low heat requirement conditions would come within the scope of this patent, as well as stating that the sale of a stoker with such an instrument or the sale of the instrument alone for use in the dual control of the stoker operation constitutes infringement of these patents and, therefore, suggested that in the purchase of control instruments it is first ascertained if the purchase of the instrument also purchases rights under the above named patents
31 to be fully protected in this matter, and thereby did deliberately, wilfully and wrongfully conspire with said Minneapolis-Honeywell Regulator Company to substantially lessen competition and to establish a monopoly in the sale of individual controls for use in heating systems not covered per se by the said Cross patents Nos. 1,758,146 and 1,758,147.

35. Defendant believes and therefore avers that plaintiff, Mid-Continent Investment Company, Minneapolis-Honeywell Regulator Company and Detroit Lubricator Company did deliberately, wilfully and wrongfully conspire among themselves to substantially lessen competition and to establish a monopoly in the sale of individual devices, controls, articles or products for use in heating systems, which individual devices are not covered per se by the said Cross patent No. 1,758,146, by conveying to the purchasers of each individual control, article or product for use in heating systems of the type described and claimed in the Cross patent No. 1,758,146, when purchased only from Minneapolis-Honeywell Regulator Company or Detroit Lubricator Company, a license to use the system described and claimed in the said Cross patent No. 1,758,146 in the manner displayed on pages 13 and 14 in "Condensed Catalogue and Price List" of Minneapolis-Honeywell Regulator Company, dated October 15, 1934, copies of wh h

pages are attached hereto and made a part hereof as defendant's "Exhibit G," and in the manner displayed on pages 2, 7, 8 and 9 of Detroit Lubricator catalogue dated September 30, 1933, and entitled, "'Genuine Detroit' Controls for Stokers," copies of which pages are attached
32 hereto and made a part hereof as defendant's "Exhibit H."

36. Defendant believes and therefore avers that plaintiff, Mid-Continent Investment Company, and its licensee, Minneapolis-Honeywell Regulator Company, are deliberately, wilfully and wrongfully conspiring among themselves to substantially lessen competition and to establish a monopoly in the sale of individual controls, articles or products not covered per se by the said Cross patent No. 1,758,146 by granting to the user of said controls purchased from Minneapolis-Honeywell Regulator Company the right to use the system protected by the Cross patents Nos. 1,758,146 and 1,758,147 as displayed on page 40 of "Minneapolis-Honeywell Automatic Controls Condensed Catalogue and Price List, 1940," a copy of which page is attached hereto and made a part hereof as defendant's "Exhibit I."

37. Defendant further avers that the plaintiff, well knowing the said Cross patent No. 1,758,146 did not cover the individual controls, products or articles per se for use in heating systems of the type described and claimed in said Cross patent, did in bad faith attempt to obtain alleged damages from the defendant for the manufacture and sale of controls, products or articles for use in heating systems made and sold by the predecessor of the defendant long before the filing date of the patent in suit, under threat of suit in accordance with the letter from the plaintiff to the defendant dated November 24, 1939, a copy of which
33 letter is attached hereto and made a part hereof as defendant's "Exhibit J."

38. Defendant avers that plaintiff, well knowing the claims of the said Cross patent No. 1,758,146, did not cover the individual controls, products or articles per se for use in heating systems of the type described and claimed in the said Cross patent, did in bad faith by intimidation, coercion and under threat of suit attempt to obtain Five Thousand Dollars ($5,000.00) from the defendant as expressed in the letter from plaintiff to defendant dated February 5, 1940, defendant's "Exhibit B."

39. Defendant avers that plaintiff, well knowing the claims of said Cross patent No. 1,758,146, did not cover the individual controls, products or articles per se for use in heating system of the type described and claimed in said Cross patent, did cause its attorney to erroneously advise the defendant in the letter dated August 1, 1940, defendant's "Exhibit C," that the matter of infringement and validity is res adjudicata between defendant and plaintiff and the suit plaintiff will bring will not be one to find out whether or not the defendant is entitled to practice the Cross process, but merely for an accounting to determine how much the defendant owes the plaintiff for having violated its patent in the past in an endeavor to further intimidate, coerce and under the threat of suit to obtain said Five Thousand Dollars ($5,000.00).

40. Defendant avers that plaintiff, well knowing that it had notified the defendant on November 21, 1932, of its
34 claim for infringement of the Cross patents Nos. 1,758,-146 and 1,758,147, caused its attorney on August 27, 1940, to advise the defendant that its 115-W Immersertherm is contributing to the infringement of Letters Patent No. 1,758,147 and if defendant did not cease immediately such infringing acts and account to Mid-Continent for damages occasioned by past infringement, Mid-Continent will be obliged to institute suit for judgment and an accounting, which will be done without further notice, in further intimidation and coercion to cause defendant to execute the proposed license agreement, defendant's "Exhibit D," which also included an agreement by defendant to pay plaintiff Five Thousand Dollars ($5,000.00), in accordance with the letter addressed to The Mercoid Corporation dated August 27, 1940, by plaintiff's attorney, a copy of which letter is attached hereto and made a part hereof as defendant's "Exhibit K", which notice was acknowledged and the infringement denied by defendant in its letter dated September 4, 1940, addressed to plaintiff's attorney, a copy of which letter is attached hereto and made a part hereof as defendant's "Exhibit L."

41. Defendant upon information believes and therefore avers that the acts of intimidation, coercion and threats of suit by the plaintiff hereinabove complained of were at the instigation of its licensee, Minneapolis-Honeywell Regulator Company, to perpetuate the wilfully planned monopoly in controls, products or articles for use in heating sys-

tems, which articles are not covered per se by the claims of the said Cross patent No. 1,758,146.

35 42. Defendant believes and therefore avers that the acts of intimidation, coercion and threats of suit by the plaintiff hereinabove complained of were at the instigation of its licensee, Minneapolis-Honeywell Regulator Company, to perpetuate the wilfully planned monopoly in controls, products or articles for use in heating systems, which articles are not covered per se by the claims of the Cross patent No. 1,758,146, and make the defendant a party thereto by accepting a similar license.

36 Wherefore, defendant prays:

(a) That this Honorable Court declare the rights of plaintiff and defendant and their respective legal relations in connection with the matter of the controversy herein set forth;

(b) That this Honorable Court may enter a declaratory decree adjudging that the plaintiff is not entitled to extend its patent monopoly beyond the boundaries described in the claims of the Cross patent No. 1,758,146 to include the defendant's controls not patented per se by the plaintiff;

(c) That this Honorable Court may enter a declaratory decree adjudging that the defendant's controls as specified herein, do not infringe nor contribute to the infringement of the plaintiff's patent No. 1,758,146;

(d) That this Honorable Court may enter a declaratory decree adjudging that the defendant has the right to manufacture and sell its controls, as specified herein, without molestation by the plaintiff;

(e) That this Honorable Court may enter a declaratory decree adjudging that the plaintiff has engaged in unfair competition with the defendant to defendant's injury and damage;

(f) That this Honorable Court may enter a declaratory decree that plaintiff has granted licenses to others to set up a monopoly beyond the scope of the Cross patent No. 1,758,146 in restraint of trade and in violation of the anti-trust laws;

37 (g) That this Honorable Court may enter a declaratory decree that the plaintiff has wilfully planned to set up a monopoly in controls in simulation of controls forming a part of defendant's and its predecessor's regular line for more than 15 years past, under the guise of alleged patent protection in restraint of trade;

(h) That this Honorable Court may enter a declaratory decree that plaintiff has deliberately conspired with its licensees and said licensees and the plaintiff have wilfully and unlawfully conspired among themselves to substantially lessen competition and establish a monopoly in the sale of controls in simulation of controls sold by defendant and previously sold by its predecessor in business, The Federal Gauge Company, for more than 15 years past, in restraint of trade and in violation of the anti-trust laws;

(i) That this Honorable Court may enter a decree that an accounting be awarded to defendant of plaintiff's profits, gains and advantages, and the damage sustained by defendant because of plaintiff's wrongful and unlawful acts;

(j) That this Honorable Court may enter a decree that defendant recover from plaintiff threefold the damages by it sustained on account of the unlawful restraint in trade and violation of the anti-trust laws and recover a reasonable attorney's fee;

(k) That this Honorable Court may enter a decree awarding a permanent injunction and a preliminary injunction during the pendency of this suit, restraining and
38 enjoining the plaintiff, its officers, agents, attorneys, servants, employees and all others acting by and under its direction or authority, its successors or assigns, from bringing suit for infringement of said Cross patent No. 1,758,146 against the defendant's customers or prospective customers, or directly or indirectly threatening defendant's customers or prospective customers with suit for infringement of the Cross patent No. 1,758,146, or from, in any manner, interferring with defendant's business;

(l) And such other and further relief as to this Honorable Court may seem meet and proper in the premises; that the plaintiff may be decreed to pay the costs of these proceedings.

The Mercoid Corporation,
By Landon Moore,
*Its Attorney.*
53 West Jackson Boulevard,
Chicago, Illinois.

39 VERIFICATION.

State of Illinois } ss.
County of Cook }

On this 13th day of November, 1940, before me, the undersigned, a Notary Public within and for the County and State aforesaid, personally appeared High Courteol and made oath that he is the President of The Mercoid Corporation, the above-named defendant; that he has read the foregoing Answer and Counterclaim, and knows the contents thereof; and that the same is true, except as to those matters stated on information and belief, and as to those matters he believes them to be true.

Edna Hyttinen,
*Notary Public.*

(Seal)

Filed Jan. 10, 1941.

40 And on, to wit, the 10th day of January, A. D. 1941 came the Minneapolis-Honeywell Regulator Company, by its attorneys and filed in the Clerk's office of said Court its certain Motion in words and figures following, to wit:

41 IN THE DISTRICT COURT OF THE UNITED STATES.
(Caption—2079)

MOTION.

Now comes The Mercoid Corporation, the defendant in the above entitled cause of action, the plaintiff, Mid-Continent Investment Company having been given until January 20, 1941, to plead to defendant's counterclaim, and moves this court, under Rules 17(a) and 19(a), for an order that Minneapolis-Honeywell Regulator Company, a corporation of Delaware, having as a registered agent Corporate Trust Co., 208 South LaSalle Street, Chicago, Illinois, be made an additional party-plaintiff in this cause of action on the ground that:

1. Paragraph 13 of plaintiff's answer, filed October 18, 1940, to defendant's interrogatories states that Minneapolis-Honeywell Regulator Company is the exclusive licensee under the patent in suit.

2. The defendant's counterclaim avers that the plaintiff

and the exclusive licensee under the patent in suit have conspired in restraint of trade in violation of the anti-
42 trust laws of the United States.

The Mercoid Corporation,
By Langdon Moore,
*Its Attorney.*
53 West Jackson Boulevard,
Chicago, Illinois.

43 In the District Court of the United States.
* * (Caption—2070) * *

## MEMORANDUM IN SUPPORT OF MOTION.

Rule 17(a), Rules of Civil Procedure, requires that:

"Every action shall be prosecuted in the name of the real party in interest"

and Rule 19(a), Rules of Civil Procedure, states:

"* * * persons having a joint interest shall be made parties and be joined on the same side as plaintiff or defendant".

The plaintiff, Mid-Continent Investment Company has admitted in its answer to interrogatories that Minneapolis-Honeywell Regulator Company is an exclusive licensee.

In *Smith, et al.* v. *The Buckeye Incubator Company*, 35 F. Supp. 71, April 27, 1940, upon a consideration of the allegations in the amended complaint and the applicable law, the court found that an exclusive licensee is properly joined as plaintiff in an infringement suit.

On July 31, 1939, the Circuit Court of Appeals for the Second Circuit in *Nachod & United States Signal Company, Inc., et al.* v. *The Engineering & Research Corporation* and (Automatic Signal Corporation originally a defendant), 105 F. (2d) 981, stated:

44 "But none of these holdings negatives our conclusion that an exclusive licensee is an indispensable party. * * * An exclusive licensee who has sufficient interest in the patent to compel an infringement suit (though nominally in the name of the patentee), *Independent Wireless Tel. Co.* v. *Radio Corporation of America*, 269 U. S. 459, should be regarded as coming within this definition."

and also stated:

"Indeed, the compulsory use of a patentee's name by his

licensee in an infringement suit is but a fiction which shows that the real party is the licensee. The patent owner in such cases is little more than a phantom litigant."

Minneapolis-Honeywell Regulator Company is a foreign corporation licensed to do business in the State of Illinois and has as its registered agent Corporate Trust Co., 208 South LaSalle Street, Chicago, Illinois. Therefore this court has jurisdiction of Minneapolis-Honeywell Regulator Company who is the exclusive licensee of the Mid-Continent Investment Company, the plaintiff herein.

The defendant herein in its counterclaim has alleged that the plaintiff and its exclusive licensee, Minneapolis-Honeywell Regulator Company, have conspired in restraint of trade in violation of the anti-trust laws of the United States and it is therefore necessary to a full determination of the cause at Bar that Minneapolis-Honeywell Regulator Company be joined as a party plaintiff.

Langdon Moore,
*Attorney for The Mercoid Corporation.*

ntered an. 20, 1941.

45 And afterwards, to wit, on the 20th day of January, A. D. 1941, being one of the days of the regular December term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Michael L. Igoe, District Judge, appears the following entry, to wit:

46 IN THE UNITED STATES DISTRICT COURT.

* * (Caption—2070) * *

ORDER.

It appearing that the parties hereto, by their respective attorneys, have entered into a stipulation dated January 20, 1941 and containing seven stipulated paragraphs, and the court being fully advised in the premises:

It Is Hereby Ordered and Decreed That:

1. The photostat of the license agreement dated December 31, 1938 between Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company, attached to said stipulation as plaintiff's Exhibit 7, be admitted in evidence; that defendant's Motion to compel plaintiff to produce this license agreement be considered satisfactory; and that said Motion be not argued on January 30, 1941.

2. That defendant's Motion for a protective order relieving the defendant of the obligation to answer interrogatories 3, 4, 5 and 6, set for hearing on January 30, 1941, be not heard on that date, but that the defendant shall answer certain interrogatories within ten days after the decision of the court on said motions on January 30, 1941.

47 3. That plaintiff's Exhibits be renumbered as follows:

Exhibit A to become Exhibit 1.
Exhibit B to become Exhibit 2.
Exhibit C to become Exhibit 3.
Exhibit D, attached to the second bill of particulars and identified as defendant's Exhibit D, to become plaintiff's Exhibit 4.
Exhibit E to become Exhibit 5.
Exhibit F to become Exhibit 6.

4. That in line 2 of interrogatory No. 2 of the Interrogatories Propounded by the Plaintiff, the word "defendant" be changed to "plaintiff."

5. That a copy of the Walter M. Cross Patent No. 1,758,146, dated May 13, 1930, attached to said stipulation, be amended as plaintiff's Exhibit 8.

6. That the word "Jr." be struck from the second line of paragraph 4 of the Bill of complaint.

7. That in plaintiff's Bill of Particulars filed October 8, 1940, in paragraphs 5 and 8, change "Minneapolis-Honeywell Corporation" to "Minneapolis-Honeywell Regulator Company."

Enter:

Igoe,
*Judge.*

Dated: January 20, 1941.

48 And afterwards, to wit, on the 1st day of February, A. D. 1941, being one of the days of the regular December term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Michael L. Igoe, District Judge, appears the following entry, to wit:

Entered Feb. 1, 1941.

49 IN THE DISTRICT COURT OF THE UNITED STATES.

(Caption--2070)

ORDER.

This cause came on to be heard on the motion of the defendant, The Mercoid Corporation, that Minneapolis-Honeywell Regulator Company, a corporation of Delaware, having as a registered agent Corporation Trust Co., 208 South LaSalle Street, Chicago, Illinois, be made an additional party plaintiff in this cause of action, was argued by counsel; and thereupon, upon consideration thereof, it was

Ordered, Adjudged And Decreed as follows, vis.:

1. That defendant's motion be and the same is hereby granted.

2. That the Clerk of this District Court issue a summons to Minneapolis-Honeywell Regulator Company to be served on its registered agent, Corporation Trust Co., 208
50 South LaSalle Street, Chicago, Illinois, to enter its appearance in this cause of action as party plaintiff.

3. That the original bill of complaint and subsequent pleadings be amended in accordance herewith.

Igoe,
*Judge of the United States District Court.*

Dated: February 1st, 1941.

Approved as to form:
Spencer, Marzall, Johnston & Cook,
*Attorneys for Plaintiff.*

Langdon Moore,
*Attorney for Defendant.*

51 And on, to wit, the 21st day of February, A. D. 1941, came the Plaintiff by its attorneys and filed in the Clerk's office of said Court its certain Reply to Defendant's Counter Claim, in words and figures following, to wit:

52 IN THE UNITED STATES DISTRICT COURT, Filed Feb. 21, 1941.

Northern District of Illinois,

Eastern Division.

Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company, a corporation,
*Plaintiffs,*
*vs.*
The Mercoid Corporation,
*Defendant.*
} Civil Action No. 2070.

## REPLY TO MID-CONTINENT INVESTMENT COMPANY TO DEFENDANT'S COUNTERCLAIM.

Mid-Continent Investment Company, the original plaintiff, for separate and distinct defenses in limine to the Counterclaim says:

I.

This branch of the United States District Court for the Northern District of Illinois lacks jurisdiction to try causes of action which the defendant may have against the added plaintiff, Minneapolis-Honeywell Regulator Company, alone, which causes of action are not based upon cooperative acts by the original plaintiff, Mid-Continent Investment Company, as alleged in paragraphs 32, 33 and the first part of paragraph 34 of the Counterclaim, because there is pending before another branch of this District Court a law suit between this defendant and Minneapolis-Honeywell Regulator Company in which such causes of action are in issue, which law suit was pending when the present suit was instituted.

53 II.

Paragraphs 17, first part of paragraph 18, 19, 20, 21, 22, 23 and 24 of the Counterclaim presumably under the Declaratory Judgment Act (28 U. S. C. A. 400) set up only causes of action or subject matter that has previously

been placed in issue by Mid-Continent Investment Company's Bill of Complaint and the first sixteen paragraphs of defendant's Answer; and therefore, these paragraphs should be struck from the Counterclaim.

III.

The Counterclaim should be dismissed on the ground that all issues raised therein are res adjudicata in favor of the original plaintiff, Mid-Continent Investment Company by virtue of the fact that the issues were decided or could have been introduced in previous litigation before a court of competent jurisdiction, said court being the United States District Court for the Southwestern Division of the Western District of Missouri, the litigation being Mid-Continent Investment Company *vs.* E. O. Smith, wherein the defense of E. O. Smith was conducted by the present defendant, The Mercoid Corporation, as found by the trial court, see Plaintiff's Exhibit 1 (formerly Exhibit A), Plaintiff's Exhibit 2 (formerly Exhibit B) and Plaintiff's Exhibit 3 (formerly Exhibit C).

54 IV.

And for answer to the Counterclaim, the original plaintiff, Mid-Continent Investment Company, further says:

1. Mid-Continent Investment Company admits the averments of fact of paragraph 17 of the Counterclaim.

2. Mid-Continent Investment Company admits the first allegation of paragraph 18 of the Counterclaim, but denies the second.

3. Mid-Continent Investment Company admits the averments of fact of paragraph 19 subject to the understanding that Minneapolis-Honeywell Regulator Company has certain rights as set forth in the license agreement, Plaintiff's Exhibit No. 7.

4. Mid-Continent Investment Company admits the allegations contained in paragraph 20 of the Counterclaim.

5. Mid-Continent Investment Company denies the allegations contained in paragraph 21 of the Counterclaim.

6. Mid-Continent Investment Company admits the averments of fact contained in paragraph 22 of the Counterclaim.

7. Mid.-Continent Investment Company is without sufficient information to form a belief as to the averments of the first and last sentences of paragraph 23 of the Counterclaim. Mid-Continent Investment Company denies each and every allegation contained in the second sentence of paragraph 23 of the Counterclaim.

55 8. Mid-Continent Investment Company denies the allegations of paragraph 24 of the Counterclaim.

9. In reply to paragraph 25 of the Counterclaim, Mid-Continent Investment Company admits that Minneapolis-Honeywell Regulator Company is the exclusive licensee under the patent in suit, Plaintiff's Exhibit No. 7, but denies that the Detroit Lubricator Company is now or has been licensed by the Mid-Continent Investment Company, although upon information and belief the Detroit Lubricator Company has held a sub-license from Minneapolis-Honeywell Regulator Company covering the patent in suit.

10. Mid-Continent Investment Company denies the allegations contained in paragraph 26 of the Counterclaim.

11. Mid-Continent Investment Company denies each and every allegation contained in paragraph 27 of the Counterclaim.

12. Mid-Continent Investment Company denies each and every allegation contained in paragraph 28 of the Counterclaim.

13. Mid-Continent Investment Company denies each and every allegation contained in paragraph 29 of the Counterclaim. More generally, Mid-Continent Investment Company denies each and every allegation charging Mid-Continent Investment Company with attempts to monopolize or conspiracy to monopolize or unfair competition wherever found in the Counterclaim, and alleges that its relationship to Minneapolis-Honeywell Regulator

56 Company has been purely one of licensor and licensee and that no attempts have ever been made by Mid-Continent Investment Company to extend the monopoly given it by the Cross patent in suit beyond the legal boundaries of said patent.

14. Mid-Continent Investment Company denies each and every allegation contained in paragraph 30 of the Counterclaim and more specifically alleges that Mid-Continent Investment Company is not engaged in competition

with anybody and hence cannot unfairly compete with the defendant.

15. Mid-Continent Investment Company is without sufficient information to form an opinion as to the truth of the allegations of paragraph 31 of the Counterclaim excepting those in the last three lines thereof, which allegations Mid-Continent Investment Company denies.

16. Mid-Continent Investment Company is without sufficient knowledge to form a belief as to acts of Minneapolis-Honeywell Regulator Company and alleges that it had obtained special permission from Minneapolis-Honeywell Regulator Company to negotiate the proposed license with the defendant so that Mid-Continent Investment Company acted in good faith.

17. Mid-Continent Investment Company is without sufficient information to form an opinion as to the truth of the allegations contained in paragraph 33 of the Counterclaim.

18. Mid-Continent Investment Company is without sufficient information to form an opinion as to the allegations contained in the first 22 lines of paragraph 34 of the Counterclaim, and as for the remaining allegations Mid-Continent Investment Company denies each and every allegation insofar as it departs from the following statement of facts: Mid-Continent Investment Company has always acted in good faith and has advised dealers of its ownership of the patent in suit and of its rights thereunder.

19. Mid-Continent Investment Company denies each and every allegation contained in paragraph 35 of the Counterclaim.

20. Mid-Continent Investment Company denies each and every allegation contained in paragraph 36 of the Counterclaim.

21. Mid-Continent Investment Company denies each and every allegation of paragraph 37 of the Counterclaim, but admits defendant's Exhibit J is a copy of a letter written by Mid-Continent Investment Company.

22. Mid-Continent Investment Company denies each and every allegation contained in paragraph 38 of the Counterclaim excepting that Mid-Continent Investment Company admits that defendant's Exhibit B is a copy of a letter written by Mid-Continent Investment Company.

58 23. In reply to paragraph 39 of the Counterclaim, Mid-Continent Investment Company denies each and every allegation therein contained excepting that Mid-Continent Investment Company admits that defendant's Exhibit C is a copy of a letter written by the attorneys of Mid-Continent Investment Company.

24. Mid-Continent Investment Company denies each and every allegation contained in paragraph 40 of the Counterclaim excepting that Mid-Continent Investment Company admits that defendant's Exhibit L is a copy of a letter received by the attorneys of Mid-Continent Investment Company.

25. Mid-Continent Investment Company denies each and every allegation contained in paragraph 41 of the Counterclaim.

25. Mid-Continent Investment Company denies each and every allegation contained in paragraph 42 of the Counterclaim.

Wherefore, Mid-Continent Investment Company denies that defendant is entitled to the relief prayed for in its Counterclaim or to any relief and prays that the said Counterclaim be dismissed with costs to the defendant and further for such other relief as to the court may seem just.

Mid-Continent Investment Company,
Plaintiff,
Spencer, Marzall, Johnston & Cook,
135 South LaSalle Street,
Chicago, Illinois,
*Its Attorneys.*

Wilfred S. Stone
Wilfred S. Stone

59 And on, to wit, the 26th day of February, A. D. 1941, came the Minneapolis-Honeywell Regulator Company, by its attorneys and filed in the Clerk's office of said Court its certain Reply to Defendant's Counterclaim in words and figures following, to wit:

Filed Feb. 26, 1941. 60 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—2070) * *

## REPLY BY MINNEAPOLIS-HONEYWELL REGULATOR COMPANY TO DEFENDANT'S COUNTERCLAIM.

Minneapolis-Honeywell Regulator Company, having been made a party-plaintiff to this cause involuntarily by order of Court dated February 1, 1941, hereby, by counsel specifically appearing for it only, replies to so much of defendant's counterclaim filed herein on November 18, 1940, prior to the time when Minneapolis-Honeywell Regulator Company was made a party-plaintiff, as it deems necessary and proper at this time, and to so much as relates to any alleged cause of action by defendant against Minneapolis-Honeywell Regulator Company:

1. Replying to paragraph 25 of the counterclaim, admits that it has a license from plaintiff, a copy of which marked Plaintiff's Exhibit 7 has heretofore been furnished defendant by plaintiff, Mid-Continent Investment Company.

61 2. Replying to paragraph 26 of the counterclaim, denies that the granting of such license sets up a monopoly beyond the boundaries of the Cross patent No. 1,758,146.

3. Replying to paragraph 28 of the counterclaim, denies that it has wilfully planned to set up a monopoly in products or articles for use in heating systems, or in simulation of defendant's or its predecessor's articles or products under the guise of alleged patent protection under Patent No. 1,758,146 or any patent, and avers that it does manufacture and sell products under the patent in accordance with its license, Plaintiff's Exhibit 7.

4. As a licensee, denies each and every allegation contained in paragraph 29 of the counterclaim, denies that it has conspired to substantially lessen competition or establish a monopoly in the sale of products or articles in simulation of the products and articles sold by defendant or its predecessors, and denies any unlawful act or acts to cause injury to defendant's business, or financial damage to defendant, and avers that its acts in the sale of its products and articles and in the conduct of its business

with respect to the patent in suit tend to and do increase competition.

5. Replying to paragraph 31 of the counterclaim, denies that it has done any acts in unfair competition with the defendant, and resulting in injury or damage to the defendant.

62 6. Replying to paragraph 32 of the counterclaim, avers that so long as it remained an exclusive licensee under Patent No. 1,758,146, it advised the trade of the facts, and denies that at any time it was acting in bad faith, and avers that it was willing to release its exclusive license to permit plaintiff, Mid-Continent Investment Company, to license this defendant.

7. Denies the allegations of paragraph 33 of the counterclaim, and avers that it acted in good faith at all times and advised the trade of the facts in accordance with its rights obtained by said license, Plaintiff's Exhibit 7.

8. Replying to the first 22 lines of paragraph 34 of the counterclaim, admits it sent to stokers manufacturers letters, a copy of one of said letters is attached hereto and marked Minneapolis-Honeywell Exhibit 1, and avers that it acted in good faith at all times and advised stoker manufacturers and dealers of the facts in accordance with its rights obtained by said license, Plaintiff's Exhibit 7, and denies that it conspired to substantially lessen competition or establish a monopoly in the sale of controls for use in heating systems not covered per se by the Cross Patent No. 1,758,146.

9. Replying to paragraph 35 of the counterclaim, denies the allegations thereof, denies that it conspired with Mid-Continent Investment Company and Detroit Lubricator Company, or either of them, to substantially lessen competition or establish a monopoly in devices not covered by Patent No. 1,758,146, and denies that the individual controls used and sold for use in systems covered by said patents are outside of said patent; admits reference

63 to said Cross patent No. 1,758,146 in accordance with pages 13 and 14 of its "Condensed Catalogue and Price List" dated October 15, 1934, Defendant's Exhibit G.

10. Replying to paragraph 36 of the counterclaim, denies that it has conspired with Mid-Continent Investment Company to substantially lessen competition or establish a monopoly in the sale of articles not covered per se by Cross Patent No. 1,758,146, by granting to users of

controls purchased from it the right to use the system protected by Patent No. 1,758,146, or by any other acts.

11. Replying to paragraph 41 of the counterclaim, denies that it instigated any acts of intimidation, coercion or improper threats of suit by Mid-Continent Investment Company against the defendant, and avers that it has at all times operated and carried on its business with respect to the patent in suit as a licensee of plaintiff, Mid-Continent Investment Company, and denies the allegations of paragraph 41 of the counterclaim.

12. In reply to paragraph 42 of the counterclaim, denies the allegations thereof, and denies that it instigated any acts of intimidation, coercion or improper threats of suit by plaintiff, Mid-Continent Investment Company, against defendant, and asserts that it has at all times carried on its business with respect to the patent in suit as a licensee of the plaintiff, Mid-Continent Investment Company, under said Cross Patent No. 1,758,146, and denies that it has at any time acted to make defendant a party to "any wilfully planned monopoly in controls, products or articles for use in heating systems."

64

13. As to paragraphs 17 to 24 inclusive, 27, 30 and 37 to 40 inclusive, Minneapolis-Honeywell Regulator Company make no reply because those paragraphs are directed solely to alleged matters relating to plaintiff, Mid-Continent Investment Company.

Minneapolis-Honeywell Regulator Company,
*Party-Plaintiff*,
By Bair & Freeman,
*Its Attorneys*.

Of Counsel:
Will Freeman.

(Dated: Chicago, Illinois, February 26, 1941.)

65 And on, to wit, the 7th day of March, A. D. 1941 came the Minneapolis-Honeywell Regulator Company by its attorneys and filed in the Clerk's office of said Court its certain Interrogatories in words and figures following, to wit:

66 IN THE DISTRICT COURT OF THE UNITED STATES. Filed Mar. 7, 1941.

* * (Caption—2070) * *

INTERROGATORIES PROPOUNDED BY THE DEFENDANT TO MINNEAPOLIS-HONEYWELL REGULATOR COMPANY, ONE OF THE PARTIES-PLAINTIFF, UNDER RULE 33, RULES OF CIVIL PROCEDURE.

Interrogatories propounded under Rule 33, Rules of Civil Procedure, by the defendant, The Mercoid Corporation, to the party Minneapolis-Honeywell Regulator Company joined as party-plaintiff in the above entitled cause, pursuant to the order of this Court dated February 1, 1941. Minneapolis-Honeywell Regulator Company having entered its appearance as a party-plaintiff in the above entitled cause on February 26, 1941.

1. What was the title of the office held by Charles B. Sweatt when he executed the exclusive license agreement from Mid-Continent Investment Company, Inc. under the Cross patents No. 1,758,146 and No. 1,758,147, in behalf of Minneapolis-Honeywell Regulator Company on or about November 7, 1938, as the title was omitted under his signature on the photostat of said agreement, Mid-Continent Investment Company "Exhibit 7"?

67 2. Was Charles B. Sweatt or C. B. Sweatt Vice-President of Minneapolis-Honeywell Regulator Company during the year 1932?

3. Was Harold W. Sweatt or H. W. Sweatt an officer of Minneapolis-Honeywell Regulator Company during the year 1931, and if so, please state his official title.

4. Was Harold W. Sweatt or H. W. Sweatt an officer of Minneapolis-Honeywell Regulator Company during the year 1935, and if so, please state his official title.

5. Can and will Minneapolis-Honeywell Regulator Company furnish The Mercoid Corporation, the defendant, with a photostat of the sub-license granted by Minneapolis-Honeywell Regulator Company to Detroit Lubricator Company under the terms of the exclusive license agreement with Mid-Continent Investment Company and attach the same to its answer to this interrogatory?

6. Did Minneapolis-Honeywell Regulator Company mail the same letter or letters of the same import as Min-

neapolis Honeywell Exhibit 1, forming a part of Minneapolis-Honeywell Regulator Company's reply to defendant's counterclaim, filed February 26, 1941, to any of the following manufacturers of coal stokers, and if so, please specify which ones:

Fairbanks, Morse & Company, Stoker Division, Chicago, Illinois.
Brownell Company, Dayton, Ohio.
The Bardes Stoker Works, Cincinnati, Ohio.
The Bluffton Mfg. Co., Findlay, Ohio.
Combustioneer Inc., Goshen, Indiana, or Springfield, Ohio.
68 The Will-Burt Company, Orrville, Ohio.
Eddy Stoker Co., Chicago, Illinois.
Paragon Kol-Master Corporation, Oregon, Illinois.
Link-Belt Company, Chicago, Illinois.
Holcomb & Hoke Mfg. Co., Indianapolis, Indiana.
Econocol Stoker Division of Cotta Transmission Corp., Rockford, Illinois.
The Sinker-Davis Co., Indianapolis, Indiana.
National Steam Pump Co., Upper Sandusky, Ohio.

7. Did Minneapolis-Honeywell Regulator Company send the letter, Minneapolis-Honeywell Exhibit 1, or one of the same import, to Brownell Company, Dayton Ohio?

8. Did Minneapolis-Honeywell Regulator Company grant any sub-licenses under its exclusive license from Mid-Continent Investment Company, Mid-Continent Exhibit 7, under the Cross patents No. 1,758,146 and No. 1,758,147, to other manufacturers than the one granted Detroit Lubricator Company?

9. If the answer to interrogatory No. 8 is in the affirmative, can and will Minneapolis-Honeywell Regulator Company furnish the defendant with a photostat of each of such sub-licenses?

10. Did Minneapolis-Honeywell Regulator Company submit a proposed license to the defendant, The Mercoid Corporation, during the year 1935, as set forth in the photostat attached hereto and marked defendant's "Exhibit Q"?

11. Was the David J. Jones patent, No. 1,969,136,
August 7, 1934, for "Control System For Stoker Mo-
69 tors", referred to in the last paragraph of page 2
of the proposed license, defendant's "Exhibit Q",
while pending in the Patent Office involved in an inter-

ference with the application for the Russel W. Stem patent for "Heating Furnace Controls", No. 1,882,341, October 11, 1932, and assigned to Penn Electric Switch Co. of Des Moines, Iowa?

12. Does Minneapolis-Honeywell Regulator Company now own the Stem patent No. 1,882,341, or does it possess a license under said Stem patent No. 1,882,341, as it lists said Stem patent in its "Patent Notice" on page 40 of its 1940 Catalogue, defendant's "Exhibit I" forming a part of defendant's answer, and said Stem patent No. 1,882,341 is also included under "Patent Notice" with the two Cross patents on pages 2 and 7 of the Detroit Lubricator Company's Catalogue of 1933, defendant's "Exhibit H", forming a part of defendant's answer?

13. Did the application of Sylvanus C. Shipley, Serial No. 606,440, filed April 30, 1932, for "Control Systems", referred to in the first paragraph on page 3 of said proposed license, defendant's "Exhibit Q", become a patent and if so, please identify it by patent number and date?

14. Did the application of Sylvanus C. Shipley, Serial No. 737,917, filed August 1, 1934, for "Thermostatic Switching Mechanisms", referred to in the first paragraph on page 3 of the proposed license, defendant's "Exhibit Q", become a patent and if so, please identify it by patent number and date?

70 15. Did any divisional application of either of the said Sylvanus C. Shipley applications, referred to in interrogatories Nos. 13 and 14, ever become a patent and if so, please identify by patent number and date.

16. Did Minneapolis-Honeywell Regulator Company, in discussing the proposed license, defendant's "Exhibit Q", with the defendant, The Mercoid Corporation, or its attorney, state that the Jones patent and the Shipley applications relate only to stoker controls and that one of the Shipley applications relates to the system and the other to the switching mechanism; also that the Shipley applications had run into several interferences in the Patent Office and that Minneapolis-Honeywell Regulator Company had been buying up the patents of the other parties involved in these interferences; and further that the Shipley applications were included in this license so that if in the event the broad claims were awarded to some of the other parties whose applications had been purchased by Minneapolis-Honeywell regulator Company, Minneapolis-Honeywell Regulator

Company would carry these claims over in the license for the benefit of the licensee.

17. Did Minneapolis-Honeywell Regulator Company buy up or take license under any of the patents or applications for patent involved in interferences with the Shipley applications?

18. If the answer to interrogatory No. 17 is in the affirmative, please indicate the patents involved in said
71 interferences by patent number and date and state the nature of the rights purchased thereunder.

19. If the answer to interrogatory No. 17 is in the affirmative, and applications for patent were involved in said interferences, which have since become patents, please identify them by patent number and date and state the nature of the rights purchased thereunder.

20. Is the sub-license granted Detroit Lubricator Company still in existence, and if not, when was it cancelled?

The Mercoid Corporation,
*Defendant.*
By Langdon Moore,
*Its Attorney.*
53 West Jackson Boulevard,
Chicago, Illinois.

Entered Mar. 8, 1941.

72 And afterwards, to wit, on the 8th day of March, A. D. 1941, being one of the days of the regular March term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Michael L. Igoe, District Judge, appears the following entry, to wit:

73 IN THE UNITED STATES DISTRICT COURT.
(Caption—2070)

ORDER.

This cause coming on to be heard on two Motions of the defendant, namely:

* * * * *

and, upon three motions of the plaintiff, Mid-Continent Investment Company, namely:

* * * * *

74 Now, Therefore, It Is Ordered:

* * * * *

3. The Complaint of Mid-Continent Investment Company is hereby amended by striking the words "within the past six years" in lines 2 and 3 of paragraph 6 on page 2 thereof and substituting the words "for a long time past", and by inserting in the prayer of the Complaint before the ",", in the fifth line of the first complete paragraph the words "from that time commencing six years prior to the filing of the suit identified in paragraph 7 thereof".

4. The Complaint of Mid-Continent Investment Company is hereby amended by adding the following paragraph:

"13. The defendant is estopped to deny contributory infringement of the patent in suit for the reason that it defended the suit identified in paragraph 7 of the Complaint under an express or implied warranty to defend patent suits wherein its equipment was charged to contributorily infringe a patent."

5. The reply of Mid-Continent Investment Company to the defendant's Counterclaim is hereby amended by adding the following paragraph:

"27. The defendant is estopped to assert its Counterclaim against Mid-Continent Investment Company for the reason that the Counterclaim states causes of action that were equally available to the defendant Smith in the suit identified in paragraph 7 of the Complaint, and failure to assert such causes of action is a bar to their assertion here."

6. The defendant has leave to amend its Answer in any way on or before March 27, 1941.

7. The Answers of F. W. Speck to interrogatories propounded by the defendants to be taken on March 14, 1941 in Galena, Kansas are not to be taken, the court now finding as a fact that the Will-Burt stoker and Mercoid "Sensatherm", Mercoid M51 Furnace Control, Mercoid M51 Stack Control and Mercoid V-2 Relay were purchased by E. O. Smith from the Galena Machine and Electric Company of Galena, Kansas who in turn purchased the Will-Burt stoker and said Mercoid controls from The Will-Burt Company of Orrville, Ohio, and that Walter M. Cross, Jr. interviewed F. W. Speck of the Galena Machine and Electric Company, its then president, and E. O. Smith as to this installation prior to bringing the suit identified in paragraph 7

of the Complaint, it being expressly understood that
76 these findings of fact do not constitute a finding that these facts are or are not pertinent to the case at bar.

Enter:

Igoe,
*Judge.*

Date: March 8, 1941.

Approved as to substance and form.

Spencer, Marzall, Johnston & Cook,
*Attorneys for Mid-Continent Investment Company.*

Wilfred S. Stone,
Wilfred S. Stone,
Bair & Freeman,
*Attorneys for Minneapolis-Honeywell Regulator Company.*

Blair & Freeman,
Langdon Moore,
Langdon Moore.
*Attorney for The Mercoid Corporation.*

Filed Mar. 28, 1941.

77 And on, to wit, the 28th day of March, A. D. 1941, came the Minneapolis-Honeywell Regulator Company, by its attorneys and filed in the Clerk's office of said Court its certain Reply to Interrogatories Propounded by Defendant Under Rule 33, Rules of Civil Practice, in words and figures following, to wit:

78 In the District Court of the United States.

* * (Caption—2070) * *

MINNEAPOLIS HONEYWELL REGULATOR COMPANY'S REPLY TO INTERROGATORIES PROPOUNDED BY DEFENDANT UNDER RULE 33, RULES OF CIVIL PROCEDURE.

Now comes the plaintiff, Minneapolis-Honeywell Regulator Company, by W. L. Huff, its Vice-President, having first been duly sworn under oath and replies to the interrogatories propounded by the defendant, to the best of his understanding and belief, as follows:

1. Answering Interrogatory 1—Charles B. Sweatt on

November 7, 1938, when he executed the license agreement, Mid-Continent Investment Company, Exhibit 7, was Vice-President of Minneapolis-Honeywell Regulator Company.

2. Answering Interrogatory 2—Charles B. Sweatt, or C. B. Sweatt, was Vice-President of Minneapolis-Honeywell Regulator Company during the year 1932.

79 3. Answering Interrogatory 3—Harold W. Sweatt, or H. W. Sweatt, was during the year 1931 Vice-President of Minneapolis-Honeywell Regulator Company.

4. Answering Interrogatory 4—Harold W. Sweatt, or H. W. Sweatt, was during the year 1935 President of the Minneapolis-Honeywell Regulator Company.

5. Answering Interrogatory 5—There is attached hereto, marked "Plaintiff's Exhibit 2", a typewritten copy of the Sub-license Agreement granted by Minneapolis-Honeywell Regulator Company to Detroit Lubricator Company.

6. Answering Interrogatory 6—Letters like Minneapolis-Honeywell Exhibit 1 were sent to stoker manufacturers on or about February 25, 1932, but at this time plaintiff, Minneapolis-Honeywell Regulator Company, cannot state whether or not each of the manufacturers referred to in Paragraph 6 of defendant's interrogatories were mailed to each of said manufacturers therein listed. If said companies listed in Paragraph 6 of defendant's interrogatories were in business on or before February 25, 1932 and were manufacturing stokers and were included in a mailing list of stoker manufacturers, then such a letter was in all probability sent to said manufacturers. A search of Minneapolis-Honeywell Regulator Company's files with respect to the manufacturers enumerated in Paragraph 6 of defendant's interrogatories failed to disclose any carbon copies of said letter corresponding to Minneapolis-Honeywell's Exhibit 1. By reference to a Minneapolis-Honeywell Regulator Company interoffice bulletin dated February 29, 1932, reading as follows:

"Attached hereto for your information and guidance is a copy of a letter which is going to all stoker manufacturers"

80 Minneapolis-Honeywell Regulator Company assumed therefore that letters like Minneapolis-Honeywell Exhibit 1 were sent to said manufacturers.

7. Answering Interrogatory 7—Minneapolis-Honeywell Regulator Company cannot definitely state at this time that a letter corresponding to Minneapolis-Honeywell Exhibit 6 was sent to the Brownell Company of Dayton, Ohio.

The same assumption as made in answer to Interrogatory 6 is made in connection with the Brownell Company.

8. Answering Interrogatory 8—No sub-licenses were granted under the License Agreement, Mid-Continent Exhibit 7. See answer to Interrogatory 5 with respect to a sub-license granted prior to the date of the license, Mid-Continent Exhibit 7.

9. Answering Interrogatory 9—No answer required since answer to Interrogatory 8 is in the negative.

10. Answering Interrogatory 10—The answer to Interrogatory 10 is yes.

11. Answering Interrogatory 11—The answer to Interrogatory 11 is yes.

12. Answering Interrogatory 12—Minneapolis-Honeywell Regulator Company does not own the Stem Patent No. 1,882,341. Minneapolis-Honeywell Regulator Company has a license under the Stem Patent No. 1,882,341.

13. Answering Interrogatory 13—Shipley application Serial No. 606,440 became United States Letters Patent No. 2,063,898 dated December 15, 1936.

14. Answering Interrogatory 14—Shipley application Serial No. 737,917 became United States Letters Patent No. 2,117,514 dated May 17, 1938.

15. Answering Interrogatory 15—Shipley application Serial No. 737,917 referred to in Interrogatory 14 was a division of application Serial No. 606,440 referred to in Interrogatory 13.

16. Answering Interrogatory 16—Minneapolis-Honeywell Regulator Company does not at this time recall definitely what it "discussed" with the defendant with respect to the items enumerated in Interrogatory 16, but does find a letter dated December 2, 1935 addressed to Langdon Moore, counsel for defendant, and a copy of said letter is attached hereto marked "Minneapolis-Honeywell Exhibit 3."

17. Answering Interrogatory 17—The answer to Interrogatory 17 is yes.

18. Answering Interrogatory 18—There were no patents involved in interference with Shipley applications. If defendant meant applications for Letters Patent, then the applications involved in interference have now matured into patents as follows:

| | | |
|---|---|---|
| Brownell, et al. | 2,064,193 | issued Dec. 15, 1936 |
| Burton | 2,064,194 | issued Dec. 15, 1936 |
| Benjamin | 2,109,939 | issued Mar. 1, 1938 |

Minneapolis-Honeywell Regulator Company acquired the entire rights of the applications which matured into the above three enumerated patents. Peference is here made to the assignments of record in the United States Patent Office and which may be found with respect to Brownell patent in Liber O156, page 83; and in respect to Bur-
82 ton patent in Liber Q156, page 464; and in respect to Benjamin patent in Liber E163, page 169. See also answer to Interrogatory 19 with respect to the rights acquired by Minneapolis-Honeywell Regulator Company.

19. Answering Interrogatory 19—The applications involved in interference with said Shipley applications matured into Letters Patent enumerated in answer to Interrogatory 18 hereof and in addition a divisional application based upon the Benjamin application (now patent No. 2,109,939) matured into United States Letters Patent No. 2,161,892 dated June 13, 1939. As to the rights purchased as requested in Interrogatory 19, Minneapolis-Honeywell Regulator Company refers to answer to Interrogatory 18 and in addition states that Minneapolis-Honeywell Regulator Company did grant to Benjamin a non-exclusive license under the Benjamin application, now patent No. 2,109,939, as well as a similar non-exclusive license or right under the divisional Benjamin application now patent No. 2,161,892. As to the assignment record with respect to the Benjamin divisional application now patent No. 2,161,892, reference is made to the United States Patent Office assignment records, Liber Z164, page 281.

20. Answering Interrogatory 20—The Sub-license granted Detroit Lubricator Company is not now in existence, it having been canceled as of December 31, 1938.

Minneapolis-Honeywell Regulator Company,
By W. L. Huff,
*Vice-President.*

83 And on, to wit, the 3rd day of April, A. D. 1941, came the Defendant by its attorneys and filed in the Clerk's office of said Court its certain Amendment to Answer in words and figures following, to wit:

Filed Apr. 3, 1941. 84 IN THE DISTRICT COURT OF THE UNITED STATES.

(Caption—2070)

## AMENDMENT TO DEFENDANT'S ANSWER TO PLAINTIFF'S BILL OF COMPLAINT.

In answer to the plaintiff's amended bill of complaint and pursuant to the order making Minneapolis-Honeywell Regulator Company a party plaintiff hereto and allowing the defendant to amend its answer, the defendant herein amends its answer to plaintiff's bill of complaint as follows:

Cancel paragraph 3 of the answer and insert the following:

3. Defendant admits the allegations contained in paragraph 4 of the bill of complaint that Letters Patent No. 1,758,146 was duly and legally issued to Walter M. Cross.

After paragraph 9 of the answer insert the following:

9a. Defendant denies each and every allegation contained in paragraph 13 (added to the bill of complaint by order of March 8, 1941) and, therefore, leaves plaintiff to its proof thereof.

Paragraph 20 of the answer and counterclaim, in line 3 thereof, following "years," insert the following:

85 or at any other time.

Paragraph 25 of the answer and counterclaim, in line 5 thereof, following "articles" insert the following:

in interstate commerce.

Paragraph 26 of the answer and counterclaim, in line 5 thereof, following "articles" insert the following:

in interstate commerce.

Paragraph 27 of the answer and counterclaim, in line 6 thereof, following "sold" insert the following:

in interstate commerce.

Paragraph 28 of the answer and counterclaim, in line 3 thereof, following "use" insert the following:

in interstate commerce.

Paragraph 29 of the answer and counterclaim, in line 4 thereof, following "sale" insert the following:

in interstate commerce.

Paragraph 30 of the answer and counterclaim, in line 3 thereof, following "articles" insert the following:

in interstate commerce.

Paragraph 31 of the answer and counterclaim, in line 2 thereof, following "sale" insert the following:

in interstate commerce.

Paragraph 32 of the answer and counterclaim, in line 2 thereof, following "Company" insert the following:

, joined as a party plaintiff herein,

and in line 4 thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company

also in last line thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company.

86 Paragraph 33 of the answer and counterclaim, in line 2 thereof, following "Company" insert the following:

, joined as a party plaintiff herein,

and in line 3 from the bottom thereof, following "sale" insert the following:

in interstate commerce.

Paragraph 34 of the answer and counterclaim, in line 2 thereof, following "Company" insert the following:

, joined as a party plaintiff herein,

and in line 22 thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company

also in line 3 from the bottom thereof, following "sale" insert the following:

in interstate commerce.

Paragraph 35 of the answer and counterclaim, in lines 1 and 2 thereof, change "plaintiff" to plaintiffs and in line 3 thereof, change "and" before "Detroit" to with; also in line 6 thereof, following "sale" insert the following:

in interstate commerce.

Paragraph 36 of the answer and counterclaim, in line 3 thereof, following "Company" insert the following:

, joined as a party plaintiff herein,

and in line 6 thereof, following "sale" insert the following:

in interstate commerce.

Paragraph 37 of the answer and counterclaim, in line 1 thereof, following "plaintiff," insert the following:

Mid-Continent Investment Company,

87 and in line 10 thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company.

Paragraph 38 of the answer and counterclaim, in line 1 thereof, following "plaintiff," insert the following:

Mid-Continent Investment Company.

Paragraph 39 of the answer and counterclaim, in lines 1, 8 (two occasions) and line 11 thereof, following "plaintiff" in each instance insert the following:

Mid-Continent Investment Company.

Paragraph 40 of the answer and counterclaim, in line 1 thereof, following "plaintiff," insert the following:

Mid-Continent Investment Company

and in line 16 thereof, change "plaintiff's attorney" to read:

attorney for plaintiff Mid-Continent Investment Company.

Paragraph 41 of the answer and counterclaim, in line 6 thereof, following "articles" insert the following:

in interstate commerce.

Paragraph 42 of the answer and counterclaim, in line 3 thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company

and in line 4 thereof, following "Company," insert the following:

joined as a party plaintiff herein,

also in line 6 thereof, following "articles" insert the following:

in interstate commerce.

88 The defendant further amends its answer and counterclaim by adding the following paragraphs at the end thereof:

43. Defendant avers that during the year 1930, Minneapolis-Honeywell Regulator Company, one of the parties-plaintiff herein, Time-O-Stat Controls Company and The Mercoid Corporation, the defendant herein, all marketed in interstate commerce temperature responsive electric switches which were adaptable for use to maintain the fire in an automatic coal stoker by locating such switches in the stack of the furnace, in counter-distinction from the location of such switches in the combustion chamber as disclosed in the Cross patent in suit, and Time-O-Stat Controls Company at that time owned an application for patent for a Control System For Stoker Motors, Serial No.

468,889, filed July 18, 1930, by David J. Jones, in which system the stoker fire is maintained by a temperature responsive switch located in the stack, and the said three companies held conferences after the Cross patent No. 1,758,146 for Domestic Heating Systems, the patent in suit, disclosing the temperature responsive control switch located in the combustion chamber, was granted on May 13, 1930, to consider taking a license under said Cross patent, at which time it was agreed that no one of the three companies would do anything in regard to taking a license until they had conferred with each other, as shown by the letter from Minneapolis-Honeywell Regulator Company, one of the parties plaintiff herein, to the defendant, dated July 6, 1931, a copy of which letter is attached hereto and made a part hereof as defendant's "Exhibit CC"; during the first part of the year 1931, Minneapolis-Honeywell Regulator Company absorbed Time-O-Stat Controls Company and became the owner of the said Jones application Serial No. 468,889 upon a Control System For Stoker Motors, which later became patent No. 1,969,136, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit DD", and Minneapolis-Honeywell Regulator Company subsequently thereto and on July 6, 1931, advised The Mercoid Corporation that Minneapolis-Honeywell Regulator Company had checked on the said Cross Domestic Heating System patent and did not feel that the claims of said Cross patent covering the periodic starting and stopping of a burner by temperature of the combustion chamber can cover a device located in the stack, as expressed in said letter dated July 6, 1931, defendant's "Exhibit CC", yet on December 23, 1931, Minneapolis-Honeywell Regulator Company secured an exclusive license agreement to make, use and sell and to sub-license others to make, use and sell the invention disclosed in said Cross patent No. 1,758,146, and to pay Mid-Continent Investment Company, one of the parties plaintiff herein, a royalty thereunder based only upon each combustion stoker switch, as defined in said license, made and sold by it and by any of its sub-licensees and agreed to mark each of said combustion stoker switches made and sold by it with the word "Patent" and the number or numbers of the patents applicable thereto and require its sub-licensees to do the same, plain-

tiff's Exhibit 6, and defndant further avers that by the
90 granting of this license under the said Cross Domestic Heating System patent in suit and by the payment of a royalty based upon the number of combustion stoker switches sold, Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company did deliberately, wilfully and wrongfully conspire to establish a monopoly in the sale of a combustion stoker switch in interstate commerce, which combustion stoker switch is not covered per se by the Cross patent No. 1,758,146 and the use of which when located in the stack Minneapolis-Honeywell Regulator Company did not believe was covered by the claims of the said Cross patent and which combustion stoker switch Minneapolis-Honeywell Regulator Company made and sold to be located in the stack and not in the combustion chamber as described in said Cross patent, as expressed in the letter dated September 30, 1931, from Minneapolis-Honeywell Regulator Company to defendant, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit EE".

44. Defendant avers that the application for patent of David J. Jones, Serial No. 468,889 for a Control System For Stoker Motors, owned by Minneapolis-Honeywell Regulator Company, while pending in the Patent Office became involved in an interference with the application of Russell W. Stem, Serial No. 480,045, filed September 6, 1930, owned by Penn Electric Switch Company, for a system of controlling a stoker motor by a combustion stoker switch located in the stack of the furnace; said Stem application became patent No. 1,882,341 upon October 12, 1932, a copy of which is attached hereto and made a part hereof as
91 defendant's "Exhibit FF", and Minneapolis-Honeywell Regulator Company did obtain a license from Penn Electric Switch Company granting Minneapolis-Honeywell Regulator Company the right to grant a non-exclusive sub-license to make, use and sell heating furnace controls disclosed in said Stem patent No. 1,882,341, the entire right, title and interest in and to said Stem invention and patent being owned by Penn Electric Switch Company subject only to certain rights of Minneapolis-Honeywell Regulator Company; and thereafter on July 19, 1933, Minneapolis-Honeywell Regulator Company did grant to Detroit Lubricator Company a non-exclusive sub-license, Minneapolis-Honeywell Exhibit No. 2, to make and have

made for it and to use and to sell combustion stoker switches, as defined in said license, and to use and to sell any and all apparatus in whole or in part for use in or to constitute embodiments of the inventions covered by Cross patent No. 1,758,146 for a Domestic Heating System; Cross patent No. 1,758,147 for a Heating System Control; Stem patent No. 1,882,341 for a Heating Furnace Control; said Jones application Serial No. 468,889 for a Control System For Stoker Motors and patent to be granted thereon and as covered by an application of Sylvanus C. Shipley Serial No. 606,440 and patent to be granted thereon, which application later became patent No. 2,063,898, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit GG", owned by Minneapolis-Honeywell Regulator Company, for a Control System For Automatic Stokers, such non-exclusive license to make, use and sell the Combustion Stoker Switch shown and described in said Shipley application is restricted
92 to the manufacture, use and sale of said Shipley Combustion Stoker Switch for use only in the systems or system controls shown and described in said patents and applications; and, provided further, that only those systems or system controls shall be licensed hereunder for which Detroit Lubricator Company shall pay to Minneapolis-Honeywell Regulator Company the hereinafter prescribed royalty due and payable hereunder for each Combustion Stoker Switch used in each such licensed system or system control, the consideration for said license being the payment of a royalty upon each combustion stoker switch responsive directly to temperature of combustion gases and adapted to cooperate with other devices or apparatus to prevent extinguishment of the fire of an automatic coal stoker sold by or for it and said sub-license required Detroit Lubricator Company to select a particular designation and model or parts number and to apply such designation and number to each licensed combustion stoker switch made and sold by it for use in said patented controls or systems and to use such designation and number in all references to such licensed switches in Detroit's catalogs and advertising literature and to accompany such designation and number by the following notice:

"Patent Notice: This control carries with it a license to use a system of preventing extinguishment of the fire when operating under low heat requirement conditions as cov-

ered by patents Nos. 1,758,146 or 1,758,147 and or 1,882,341 and the case may be."

93 and to permanently and legibly mark each combustion stoker switch made and sold by it with the above quoted patent notice and further to add to the said notice the number or numbers of any patents hereinafter granted pursuant to said Jones and Shipley applications; and defendant further avers that Minneapolis-Honeywell Regulator Company and Detroit Lubricator Company did deliberately, wilfully and wrongfully conspire to establish a monopoly in the sale in interstate commerce of a combustion stoker switch not covered per se in said Stem patent nor in said applications of Jones and Shipley and defendant still further avers that Mid-Continent Investment Company did deliberately, wilfully and wrongfully conspire with Minneapolis-Honeywell Regulator Company and Detroit Lubricator Company to establish a monopoly in the sale of a combustion stoker switch not covered per se in said Cross patents No. 1,758,146 and No. 1,758,147 in restraint of trade and in violation of the Anti-Trust laws.

45. Defendant upon information believes and therefore avers that Minneapolis-Honeywell Regulator Company, one of the parties plaintiff herein, under its license agreement with Mid-Continent Investment Company, one of the parties plaintiff herein, dated December 23, 1931, plaintiff's Exhibit 6, forced or caused Mid-Continent Investment Company to bring suit for infringement of the said Cross patent No. 1,758,146 on December 18, 1933, against William M. Schermes residing at No. 1018 West 70th Street, Kansas City, Missouri, in the District Court of the United

94 States for the Western District of Missouri—Western Division, entitled Mid-Continent Investment Company *vs.* William M. Schermes, Equity No. 2430, for installing in his residence within the stack connected with the furnace located therein a device known as a hold-fire switch which has for its purpose and function the prevention of extinguishment of the fire when the said furnace is operating under low heat requirement conditions; defendant upon information believes and therefore avers that the device known as a hold-fire switch installed within the stack in the residence of said William M. Schermes was the product of the Penn Electric Switch Company and that the attorneys for the Penn Electric Switch Company, now the attorneys for Minneapolis-Honeywell Regulator Company,

in this present suit, defended this suit; defendant further avers that the Penn Electric Switch Company did deliberately, willfully and wrongfully conspire with Mid-Continent Investment Company and with Minneapolis-Honeywell Regulator Company to merely question the validity of the Cross patent on a motion to dismiss on the ground of aggregation, and after filing its answer not to take testimony in defense and not to appeal from the decree entered May 21, 1935, holding the Cross patent No. 1,758,146 infringed by the heating system in Schermes' residence, and defendant further believes and therefore further avers that Penn Electric Switch Company, owner of the Stem patent No. 1,882,341, defendant's "Exhibit FF", Mid-Continent Investment Company, one of the parties plaintiff herein, owner of the Cross patent No. 1,758,146 and Minneapolis-Honeywell Regulator Comapny, joined as a party plaintiff herein, licensed under said Stem patent and
95 said Cross patent to make, use and sell the inventions disclosed in said patents upon the payment of a royalty upon the sale of combustion stoker switches placed within the stack connected in the furnace and also known as a hold-fire switch, did deliberately, wilfully and wrongfully conspire among themselves to substantially lessen competition and to establish a monopoly in the sale in interstate commerce of combustion stoker switches or hold-fire switches not covered per se by the said Cross patent No. 1,758,146 in simulation of the products and articles sold by the defendant and previously sold by its predecessor in business The Federal Gauge Company for more than 15 years past, in restraint of trade and in violation of the Anti-Trust laws.

46. Defendant upon information believes and therefore avers that Minneapolis-Honeywell Regulator Company, one of the parties plaintiff herein, under its license agreement with Mid-Continent Investment Company, one of the parties plaintiff herein, dated December 23, 1931, plaintiff's Exhibit 6, forced or caused Mid-Continent Investment Company to bring suit for infringement of the Cross patent No. 1,758,146 on August 12, 1935, against E. O. Smith of 1002 Howard Street, Carthage, Missouri, in the District Court of the United States for the Southwest Division of the Western District of Missouri, entitled Mid-Continent Investment Company *vs.* E. O. Smith, In Equity No. 115, for installing within the stack connected with the furnace

located in his residence a device known as a hold-fire switch which has for its purpose and function the pre-
96 vention of extinguishment of the fire when said furnace is operating under low heat requirement conditions, which suit was defended by The Mercoid Corporation; Mid-Continent Investment Company asked Minneapolis-Honeywell Regulator Company for terms for a license to submit to The Mercoid Corporation as set forth in the letter dated September 16, 1935, from Minneapolis-Honeywell Regulator Company to The Mercoid Corporation, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit HH", and as set forth in the letter dated November 6, 1935, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit II", Minneapolis-Honeywell Regulator Company submitted to The Mercoid Corporation a proposed sub-license agreement, defendant's "Exhibit Q", under the Cross patent No. 1,758,146 for a Domestic Heating System; Cross patent No. 1,758,147 for a Heating System Control; Jones patent No. 1,969,136 for Control Systems For Stoker Motors, defendant's "Exhibit DD", and the patent that may issue upon the applications for patent of Sylvanus C. Shipley, Serial No. 606,440 for Control System For Automatic Stokers and Serial No. 737,917 for Thermostatic Switching Mechanism, to make and have made for it and to use and to sell "Combustion Stoker Switches", as defined in said sublicense, and to use and to sell any and all apparatus, in whole or in part, in combination with such a Combustion Stoker Switch, for use in, or to constitute embodiments of, the inventions covered by said Letters-Patent or any of them or said applications or either of them and the patents to be granted thereon, provided, however, such non-exclusive license to make,
97 use and sell the Combustion Stoker Switch shown and described in said Shipley application Serial No. 737,917 is restricted to the manufacture, use and sale of said Shipley Combustion Stoker Switch for use only in the systems and system controls shown and described in said patents and applications, and, provided further, that only those systems or system controls shall be licensed hereunder for which Mercoid shall pay to Minneapolis-Honeywell Regulator Company the hereinafter prescribed royalties due and payable hereunder for each Combustion Stoker Switch used in each such licensed system or system control and to pay

a royalty for each combustion stoker switch responsive directly to temperature of combustion gases and adapted to cooperate with other devices or apparatus to prevent extinguishment of the fire of an automatic coal fuel stoker sold by or for it, and defendant avers Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company were deliberately, wilfully and wrongfully conspiring to exert pressure upon The Mercoid Corporation to join in an illegal conspiracy to lessen competition and establish a monopoly in the sale in interstate commerce of combustion stoker switches not covered per se by the said patents or application in restraint of trade and in violation of the Anti-Trust laws,

47. Defendant avers that as set forth in the letter dated December 2, 1935, a copy of which is attached hereto and made a part hereof as defendant's "Exhibit KK", the Shipley applications for patent Serial No. 606,440 for Control Systems For Stoker Motors and Serial No. 737,917 for Thermostatic Switching Mechanism became involved in interferences while in the Patent Office and

98 Minneapolis-Honeywell Regulator Company was buying up the applications of the other parties to be included in the license under the Shipley applications with the thought that if eventually the broad claims went into some other applications which Minneapolis-Honeywell Regulator Company had purchased these claims would be carried over for the benefit of the licensees and Minneapolis-Honeywell Regulator Company did purchase some of the applications involved in interference with said Shipley applications which applications became Brownell et al. patent No. 2,064,193, Burton patent No. 2,064,194 and Benjamin patent No. 2,109,939, copies of which are attached hereto and made a part hereof as defendant's "Exhibit LL", "Exhibit MM", and "Exhibit NN", respectively, to establish a monopoly in the sale in interstate commerce of stack switches, combustion stoker switches or hold-fire switches not covered per se in any of the said patents just referred to and offered in said proposed license, defendant's "Exhibit Q", and letter of December 2, 1935, defendant's "Exhibit KK", together with the license under the Cross patent No. 1,758,146, in restraint of trade and in violation of the Anti-Trust laws.

48. Defendant upon information believes and therefore avers that Minneapolis-Honeywell Regulator Company, one of the parties plaintiff herein, under its license agree-

ment with Mid-Continent Investment Company, one of the parties plaintiff herein, dated December 31, 1938, plaintiff's Exhibit 6, forced or caused Mid-Continent In-
99 vestment Company on September 10, 1940, to bring suit against The Mercoid Corporation in the District Court of the United States for the Northern District of Illinois, Eastern Division, entitled Mid-Continent Investment Company *vs.* The Mercoid Corporation, Civil Action No. 2070, for contributing to the infringement of the Cross patent No. 1,758,146 by the sale of combustion stoker switches not covered per se by the Cross patent No. 1,758,146 and agreed to release its exclusive license to permit Mid-Continent Investment Company to grant a proposed license to The Mercoid Corporation under said Cross patent to make, use and sell combustion stoker switches for a royalty based upon the sale of said switches which are not covered per se by the Cross patent and defendant avers that in submitting said license to The Mercoid Corporation Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company are attempting to enforce the monopoly to control the sale in interstate commerce of stoker switches in restraint of trade and in violation of the Anti-Trust laws when Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company, jointly and severally, well knew that the construction of the combustion stoker switch made by The Mercoid Corporation had been on the market and in interstate commerce prior to the grant of the Cross patent in suit, dated May 13, 1930.

The defendant further amends its answer and counterclaim by amending the prayers at the end of the counterclaim as follows:

Paragraph (b), line 2 and last line thereof, following "plaintiff", each occurrence, insert the following:

Mid-Continent Investment Company.

100 Paragraph (c), last line thereof, change "plaintiff's" to the following:

Cross;

and at the end thereof add the following:

owned by Mid-Continent Investment Company, one of the parties plaintiff herein.

Paragraph (e), line 3 thereof, following "competition" insert the following:

in interstate commerce.

Paragraph (f), line 4 thereof, following "trade" insert the following:

in interstate commerce.

Paragraph (g), line 2 thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company.

Paragraph (h), line 2 thereof, following "plaintiff" insert the following:

Mid-Continent Investment Company;

line 3 thereof, following "licensees" insert the following:

Minneapolis-Honeywell Regulator Company joined as a party plaintiff herein, and Detroit Lubricator Company;

line 5 thereof, following "competition" insert the following:

in interstate commerce.

Paragraph (i), lines 2 and 4, thereof, change "plaintiff's" to plaintiffs' in each occurrence.

Paragraph (j), line 2 thereof, change "plaintiff" to plaintiffs.

101 Change the designation of paragraphs "(k)" and "(l)" to (o) and (p).

Following paragraph (j) insert the following:

(k) That this Honorable Court may enter a decree that an accounting be awarded to the defendant of profits, gains and advantages of Mid-Continent Investment Company, one of the parties plaintiff herein, and the damage sustained by defendant because of the wrongful and unlawful acts of said Mid-Continent Investment Company.

(l) That this Honorable Court may enter a decree that defendant recover from the plaintiff Mid-Continent Investment Company three fold the damages by it sustained on account of the unlawful restraint in trade and violation of the Anti-Trust laws and recover a reasonable attorney's fee.

(m) That this Honorable Court may enter a decree that an accounting be awarded to the defendant of profits, gains and advantages of Minneapolis-Honeywell Regulator Company, joined as a party plaintiff herein, and the damage sustained by defendant because of the wrongful and unlawful acts of said Minneapolis-Honeywell Regulator Company.

(n) That this Honorable Court may enter a decree that defendant recover from Minneapolis-Honeywell Regulator

Company, joined as a party plaintiff herein, three fold the damages by it sustained on account of the unlawful restraint in trade and violation of the Anti-Trust laws and recover a reasonable attorney's fee.

Paragraph (o), formerly "(k)", line 3 thereof, cancel "plaintiff" and substitute the following:

102 the plaintiffs Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company, and each of them.

The Mercoid Corporation,
By Langdon Moore,
*Its Attorney,*
53 West Jackson Boulevard,
Chicago, Illinois.

103 VERIFICATION.

State of Illinois, } ss.
County of Cook. }

On this 3rd day of April, 1941, before me, the undersigned, a Notary Public within and for the County and State aforesaid, personally appeared Hugh Courteol and made oath that he is the President of The Mercoid Corporation, the above-named Defendant; that he had read the foregoing Amendment to defendant's Answer and Counterclaim, and knows the contents thereof; and that the same is true, except as to those matters stated on information and belief, and as to those matters he believes them to be true.

Edna Hyttenir,
*Notary Public.*

(Seal)

104 And on, to wit, the 23rd day of April, A. D. 1941 came the Plaintiff by its attorneys and filed in the Clerk's office of said Court its certain Reply to Amendment of Defendant's Answer, in words and figures following, to wit:

105 IN THE UNITED STATES DISTRICT COURT. Filed Apr. 29, 1941.

(Caption—2070)

REPLY OF MID-CONTINENT INVESTMENT COMPANY TO AMENDMENT OF DEFENDANT'S ANSWER.

Mid-Continent Investment Company, the original plaintiff, for separate and distinct defenses in limine to the Amendment to the Defendant's Answer says:

I.

By the Order entered by this court on March 10, 1941, the defendant, The Mercoid Corporation, had the right "to amend its Answer in any way on or before March 27, 1941." This right was given by an understanding between the plaintiff, Mid-Continent Investment Company, and the defendant, The Mercoid Corporation. It was not understood that the defendant would amend its Counterclaim. The material in defendant's amendment to its Answer commencing with the second to the last line on page 1 and continuing to the end on page 19 is, therefore, improper. The material contained on pages 2, 3 and 4, however, would appear to be unobjectionable to the plaintiff, Mid-Continent Investment Company, even though not permitted by the court specifically, but paragraphs 43, 44, 45, 46, 47 and 48 all contain new matter designed to further complicate the issues of this case.

106

II.

The Counterclaim of the defendant, The Mercoid Corporation, as amended, is defective as a matter of law because it fails to set up instances of special damage.

III.

Paragraphs 43 and 44 should be dismissed on the ground that all issues raised therein are res adjudicata in favor of the original plaintiff, Mid-Continent Investment Company, by virtue of the fact that these issues were raised

and decided in the litigation between the plaintiff, Mid-Continent Investment Company, and one E. O. Smith, whose defense was conducted by the present defendant, see Plaintiff's Exhibits 1, 2 and 3 (formerly A, B and C).

IV.

Paragraphs 43, 44 and 47 of the Amended Answer should be dismissed because this branch of the United States District Court for the Northern District of Illinois lacks jurisdiction to try a cause of action against the added plaintiff, Minneapolis-Honeywell Regulator Company, alone because there is pending before another branch of this District Court a lawsuit between this defendant and Minneapolis-Honeywell Regulator Company in which such causes of action will not issue and which law suit was pending when the present suit was instituted.

V.

And for answer to the Amended Answer and Counterclaim, the original plaintiff, Mid-Continent Investment Company, further says:

1. To paragraphs 20 and 25 to 42 of the Counterclaim as amended, let the original answer of the plaintiff, Mid-Continent Investment Company, stand.

2. The plaintiff, Mid-Continent Investment Company is without knowledge of any facts alleged in paragraph 43 of the Amended Counterclaim other than that plaintiff's predecessor in title granted an exclusive license subject to certain rights remaining in the plaintiff's predecessor in title to Minneapolis-Honeywell Regulator Company in 1931.

3. The plaintiff, Mid-Continent Investment Company, is without knowledge of the matter alleged in paragraph 44.

4. The plaintiff, Mid-Continent Investment Company, denies each and every allegation contained in paragraphs 45, 46 and 48 insofar as it differs from the following:

By a license agreement, Plaintiff's Exhibit 6 (formerly F), plaintiff's predecessor in title granted an exclusive license to manufacture, sell or use under the patent in suit to the added plaintiff, Minneapolis-Honeywell Regu-

lator Company. This license agreement in paragraph 11 provides that the licensor, plaintiff's predecessor in title, may bring suit for infringement in its own name, or that the licensor and licensee may bring suit jointly. The plaintiff, Mid-Continent Investment Company, instituted the suits against E. O. Smith, William M. Schermes and the present suit, as identified in paragraphs 45, 46 and 48 of the Amended Answer and Counterclaim in order to protect its royalty interest in the license. Mid-Continent Investment Company instituted these suits at its own instigation because Minneapolis-Honeywell Regulator Company would not institute the suits alone or jointly, taking the position that it was up to Mid-Continent Investment Company to protect its own interest in this situation.

109 Wherefor, Mid-Continent Investment Company denies that defendant is entitled to the relief prayed for in its Counterclaim as amended or to any relief and prays that the said Amended Counterclaim be dismissed with cost to the defendant and further for such other relief as the court may seem just.

Mid-Continent Investment Company,
Spencer, Marzall, Johnston & Cook,
135 South LaSalle Street,
Chicago, Illinois,
Wilfred S. Stone,
Wilfred S. Stone,
*Of Counsel for Plaintiff.*

April 23, 1941.

110 And on, to wit, the 24th day of April, A. D. 1941, came the Minneapolis Honeywell Regulator Company by its attorneys and filed in the Clerk's office of said Court its certain Reply in word and figures following, to wit:

Filed Apr. 24, 1941.

111 IN THE DISTRICT COURT OF THE UNITED STATES.

(Caption—2070)

REPLY OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY TO "AMENDMENT TO DEFENDANT'S ANSWER TO PLAINTIFF'S BILL OF COMPLAINT."

The defendant heretofore on May 3, 1941, filed its pleading entitled as above, and therein set up various amendments to its counterclaim in addition to amendments to its Answer. Minneapolis-Honeywell Regulator Company for its reply avers as follows:

1. As to Paragraph 43, avers that in 1930 it sold a few switches adaptable for use in maintaining fire in an automatic coal stoker installation where such switches might be located in the stack of the furnace. Minneapolis-Honeywell Regulator Company has some information leading it to believe that Time-O-Stat Controls Company sold some of such switches in 1930. As to whether The Mercoid Corporation sold such switches in 1930, Minneapolis-Honeywell Regulator Company is uncertain, and, in any event, the facts are of the kind of which defendant would have better knowledge.

112 Time-O-Stat Controls Company had an interest in the Jones application, Serial No. 468,889, mentioned in Paragraph 43, as shown by Assignment recorded July 18, 1930, in Liber X-144, page 334 of the Assignment Records of the United States Patent Office.

Admits that it became the owner of Jones application Serial No. 468,889.

Admits that Harold W. Sweatt wrote the letter, Exhibit "C", and sent it to the defendant and therein stated—

"We do not feel that the Cross claims * * * can cover a device located in the stack."

However, Minneapolis-Honeywell Regulator Company had considerable doubt as to whether the Cross patent could cover an arrangement with the device located in the stack and realized that by a judicial decision the patent might be held to cover an arrangement with the device in the stack. The Court of Appeals for the Eighth Circuit did subsequently so hold in *Smith* v. *Mid-Continent Inv. Co.*,

106 F. (2d) 622 at 626. In view of this doubt, Minneapolis-Honeywell Regulator Company did take a license under Cross patent No. 1,758,146.

In taking such license there was no conspiracy to establish monopoly in switches not covered per se by the Cross patent No. 1,758,146.

Admits that it secured a license under said Cross patent, but leaves defendant to its proofs as to whether Paragraph 43 correctly states in part the contents of said license.

Minneapolis-Honeywell Regulator Company sought by said license to free itself from the possibility of litigation that might result in a decision such as that of the Eighth Circuit Court of Appeals and to put itself in a position where it could continue its business free from the uncertainties of such litigation.

113 Admits sending to defendant the letter, Exhibit EE.

2. Replying to Paragraph 44, avers that the Jones application, Serial No. 468,889, was involved in interference with Stem application, Serial No. 480,045, owned by Penn Electric Switch Co., and that Patent No. 1,882,341 issued upon said Stem application.

Admits obtaining license, copy of which was filed in this cause April 5, 1941.

Admits granting to Detroit Lubricator Company a sublicense, Minneapolis-Honeywell Exhibit 2.

As to whether Paragraph 44 correctly states the contents of said license, leaves defendant to proof of the facts, the licenses being available to show their contents.

Denies that it and Detroit Lubricator Company conspired to establish a monopoly in the sale of switches not covered by the Stem patent, nor by the applications of Jones and Shipley.

Denies that it conspired with Mid-Continent Investment Company and Detroit Lubricator or any one else to establish a monopoly in the sale of switches not covered in the Cross patent.

3. Replying to Paragraph 45, Minneapolis-Honeywell denies that it forced or caused Mid-Continent Investment Co. to bring suit against Schermes for infringement of the Cross patent in suit. Admits that the switch used by Schermes was of the Penn Electric Switch Co's. manufacture.

Minneapolis-Honeywell further denies that it conspired with Penn Electric Switch Co. and Mid-Continent Invest-

ment Company, or either of them to "merely question
114 the validity" of the Cross patent on a Motion to Dismiss, and denies that it had any control or influence over the defense made by Penn Electric Switch Co., and denies that it conspired with Penn Electric Switch Co. and Mid-Continent Investment Company or either of them "not to take testimony in defense, not to appeal from the Decree entered May 21, 1935, or to lessen competition or to establish a monopoly in the sale of switches not covered by the Cross patent No. 1,758,146 in simulation of articles sold by defendant, its predecessor or otherwise."

Minneapolis-Honeywell denies that it forced or caused Mid-Continent Investment Co., to bring suit against E. O. Smith but admits that said suit was defended by The Mercoid Corporation and avers that The Mercoid Corporation was represented by its present counsel.

4. Minneapolis-Honeywell Regulator Company did send the letter, Defendant's Exhibit HH, and the letter, Defendant's Exhibit II. As to whether Paragraph 46 accurately states the contents of the proposed sub-license agreement, Defendant's Exhibit Q, no statement is here made since Exhibit Q shows what its contents are.

It is specifically denied that Minneapolis-Honeywell Regulator Company conspired with Mid-Continent Investment Company or anyone else to exert pressure upon defendant to join in any conspiracy of any kind and it is denied that Minneapolis-Honeywell exerted pressure on defendant to join in an illegal conspiracy to lessen competition and establish a monopoly in the sale of articles not covered by the said patents or application, or to do any acts of improper restraint of trade or in violation of the Anti-Trust laws.

115 5. Avers in reply to Paragraph 47 that Harold W. Sweatt wrote and sent the letter, Defendant's Exhibit KK.

Minneapolis-Honeywell Regulator Company denies that it was buying up any applications or did buy any applications for purpose of establishing a monopoly in articles not covered per se in any of the patents referred to in Paragraph 47 of defendant's Amended Answer or that it has done any acts of improper restraint of trade or in violation of the Anti-Trust Laws.

Minneapolis-Honeywell Regulator Company avers that in purchasing the applications resulting in the patents

referred to in Paragraph 47 of defendant's Amended Answer, it did so for the purpose of eliminating costly and time-taking litigation as well as the uncertainties of outcome of such litigation.

6. Answering Paragraph 48, denies that it caused or forced Mid-Continent Investment Company to bring this suit against the defendant and avers that Minneapolis-Honeywell Regulator Company was willing to release its exclusive license and to permit Mid-Continent Investment Company to grant a license to defendant under the Cross patent, and denies that Minneapolis-Honeywell Regulator Company in any way attempted to enforce a monopoly or control the sale of any article in restraint of trade or in violation of the Anti-Trust Laws or with knowledge that the construction of the combustion stoker switch made by defendant had been on the market prior to the granting of the Cross patent on May 13, 1930.

116 7. Further replying, plaintiff, Minneapolis-Honeywell Regulator Company, avers that defendant defended the suit against E. O. Smith, decided by the Eighth Circuit Court of Appeals adversely to Smith, and in said suit against Smith the present defendant and its counsel were in control of said suit and all issues now directed against this plaintiff, Minneapolis-Honeywell Regulator Company, are res adjudicata since such issues should have and could have been determined in said suit in the Eighth Circuit by the defendant and its counsel, following the procedure it has followed in the instant suit.

8. Further replying, plaintiff, Minneapolis-Honeywell Regulator Company, avers that defendant, having delayed in bringing this action (of its Counterclaim) for more than five years, is barred by laches and the Statute of Limitations from any recovery thereon.

Wherefore, Minneapolis-Honeywell Regulator Company prays that the Counterclaim filed by defendant be dismissed at defendant's cost.

Minneapolis-Honeywell Regulator Company,
By Bair & Freeman,
*Its Attorneys.*

Of Counsel:
W. P. Bair,
Will Freeman.
(Dated: Chicago, Illinois,
April 24, 1941)

117 And on, to wit, the 6th day of January, A. D. 1942 there was filed in the Clerk's office of said Court a certain TRANSCRIPT OF TESTIMONY in words and figures following, to wit:

118 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—2070) * *

Proceedings had and evidence taken before the Honorable Michael L. Igoe, one of the Judges of said Court, in his court room in the United States Court House at Chicago, Illinois, commencing on Monday, September 8, 1941, at 10:00 o'clock a. m.

Present:

Wilfred S. Stone (Spencer, Marzall, Johnston & Cook), representing Mid-Continent Investment Company, plaintiff;

William P. Bair and Will Freeman (Bair & Freeman), representing Minneapolis-Honeywell Regulator Company, plaintiff;

119 Langdon Moore, representing The Mercoid Corporation, defendant.

Whereupon the following proceedings were had:

120 defendant pay half of it, and then abide the decision of the court as to the costs.

Mr. Moore: And each pay for their own copies?

Mr. Freeman: That is right.

Mr. Moore: That is agreeable.

WALTER M. CROSS, JR., called as a witness on behalf of plaintiff Mid-Continent Investment Company, having been first duly sworn, testified as follows:

*Direct Examination by Mr. Stone.*

Q. Will you state your name?

A. Walter M. Cross, Jr.

The Court: Speak a little louder, please. Walter M. what?

The Witness: Walter M. Cross, Jr.

Mr. Stone: Q. Where do you reside?
A. Kansas City, Missouri.
Q. What is your occupation?
A. I am a chemical engineer.
Q. With whom are you associated?
A. With the Kansas City Testing Laboratory.
121 Q. Do you have any connection with the plaintiff in this case and, if so, what?
A. Yes. I am secretary-treasurer of Mid-Continent Investment Company.
Q. How long have you held that position?
A. Since approximately 1929.
Q. Was the plaintiff organized in that year?
A. Yes.
Q. I show you Plaintiff's Exhibit 8, which is a copy of the Cross patent in suit, and ask you whether or not the plaintiff Mid-Continent Investment Company is now the owner of that patent and was at the time this suit was filed.
A. Yes, it is and was at that time.
Q. I notice that the subtitle in the patent states that the inventor originally assigned it to the Cross Coal-O-Matic Company. Will you explain how the title got from Cross Coal-O-Matic Company to the plaintiff?
A. That is true. It was assigned to the Cross Coal-O-Matic Company and the assets of that company were assigned to the Mid-Continent Investment Company in satisfaction of notes due.
Mr. Stone: I offer PLAINTIFF'S EXHIBIT 8 in evidence.
(The exhibit was so marked.)
122 Mr. Stone: Q. I show you Plaintiff's Exhibit 5 and ask you whether that is a genuine copy of the assignment of the patent in suit from Cross Coal-O-Matic Company to the present plaintiff.
A. Yes, it is.
Mr. Stone: I offer PLAINTIFF'S EXHIBIT 5 in evidence.
(The exhibit was so marked.)
Mr. Stone: Q. When was the Cross Coal-O-Matic Company organized?
A. It was organized in approximately 1927.
Q. Who was the guiding figure in that company?
A. Walter M. Cross.

Q. Is that the Walter M. Cross who was the inventor of the patent in suit, Plaintiff's Exhibit 8?

A. Yes.

Q. Is he related to you?

A. Yes. He was my father.

Q. Will you describe briefly the business of the Cross Coal-O-Matic Company?

A. That company manufactured, sold and installed coal stokers.

Q. When you say they installed coal stokers, do you mean that the company itself actually went out and built these installations?

123 A. Yes.

Q. Did the Cross Coal-O-Matic Company also manufacture stokers?

A. Yes.

Q. Will you enlarge on that?

A. That was somewhat early in the adaptation of coal stokers to what may be called domestic heating systems, that is, for homes, apartment houses, what had formerly been considered small type heating systems. We, after a good deal of experimental work, designed and put on the market a complete line of underfeed coal stokers.

Q. Are you acquainted with the patent in suit?

A. Yes.

Q. The invention of the patent in suit?

A. Yes.

Q. Will you say a few works on the need for this type of an invention at the time when Cross Coal-O-Matic Company was founded?

A. Well, as our development work progressed we found there was no way to maintain a fire in the small stoker installations. The old larger size units had always had sufficient fire bed, you might say a banked fire bed, that lasted anywhere from four to eight hours. As the smaller units were developed, we found that the fire bed would

124 burn out in anywhere from a half hour to three or four hours time, depending on the type of coal. We endeavored to find some way to remedy that, and this patent was one of the results of that research work and experiments.

Q. What is meant by a Holdfire operation?

A. In the sense spoken of here, referring to this patent, it includes the operation of some control responsive to temperature in the fire bed which will cause the stoker to

operate sufficiently often to prevent the extinguishment of the fire.

Q. Speaking generally, what is the temperature in the average furnace stack which indicates that the fire is dying down to a point where it might go out?

A. In the average installation it would be somewhere between 100 and 200 degrees Fahrenheit.

Q. That is to say, if you find that the temperature in the stack is falling from 200 toward 100, it is necessary to start the stoker in order to replenish the fuel in the furnace, to make sure that the fire does not go out?

A. That is correct.

Q. The particular type of control wanted to perform this function, then, is one which is particularly sensi-
125 tive to a range between 200 and 100 degrees, is that right?

A. Yes, that is most beneficial in that case.

Q. Now, Mr. Cross, back in the years 1928, 1929 and 1930 were you purchasing controls for use in stacks to perform this function required by one of the controls in the Cross patent?

A. We were purchasing them from various sources, from the American Radiator Company, the Federal Gauge Company and, I believe, to some extent from the Minneapolis-Honeywell.

Q. These controls had what kind of a range for turning on and off a switch?

A. You refer to the stack control type?

Q. Yes.

A. From 100 to 600 degrees was the range on those units that we first used.

Mr. Stone: Your Honor, I offer in evidence as a physical exhibit, Plaintiff's Exhibit 27, which is a copy of the transcript of record in that Missouri court.

(The exhibit was so marked.)

Mr. Stone: The defendant stipulates that Plaintiff's exhibit 37 is a reproduction of the wiring diagram and infringing installation in the Smith home.

I offer in evidence PLAINTIFF'S EXHIBIT 37.
126 (The exhibit was so marked.)

Mr. Stone: Q. Referring to Plaintiff's Exhibit 37, what kind of a furnace does that appear to be?

A. A hot air furnace.

Q. And what kind of a control may that be described to be, the M-51?

A. I should say a bonnet temperature limiting control.

Q. What is the bonnet in a furnace?

A. That is the space between the firebox and the heat absorbing elements and the surrounding casing through which the air travels to be warmed to be sent up into the building.

Q. That is, this drawing, if it were to show the complete furnace installation, would show pipes running off the top here?

A. Yes.

Q. And those pipes would open into the bonnet and the hot air from the furnace going up into the house would pass through the bonnet into the pipes?

A. That is right.

Q. You called the M-51 a limit control. What do you mean? Describe its function more in detail.

A. The purpose of it is to prevent an excessive temperature in the air that is going through the piping
127 and through the home, the idea being that if you have an excessively high temperature you may set wood afire or some material in the house afire.

Q. Do you know of any other place in a furnace such as this where one might position a limiting switch for the same purpose as M-51 is placed in Plaintiff's Exhibit 37?

A. Well, you could have it in the connection between the furnace and the chimney in order to prevent excessive temperature.

Q. What is that connection ordinarily called?

A. The stack breeching.

Q. Or the flue?

A. Or the flue.

Q. And in Plaintiff's Exhibit 37 that is 8a?

A. 8 and 8a.

Q. Now, back in 1927 to 1930, some place in there, were limiting switches, such as M-51, available?

A. Yes, they were.

Q. Were they designed for the specific purpose of handling temperature ranges, say a declining temperature range from 200 to 100?

A. No. Their ordinary use was in higher temperature ranges, to prevent excessive temperatures such as might cause ignition in the building.

128 Q. Will you explain to us what such excessive temperatures in the stack might be?

A. In the stack it might be 400 degrees.

Q. And in the bonnet?

A. The same.

Q. What, then, was the actual range of limiting switches such as the M-51 back prior to 1930 or 1931?

A. You mean the range in which they ordinarily operate?

Q. Or could operate; the range provided on the switch.

A. They could operate between 100 and 600, but ordinarily they were set to provide an operating range of, say, from 300 to 500.

Q. I show you the Cross patent in suit, Plaintiff's Exhibit 8, and ask you to state the date of that patent.

A. That patent was issued on May 13, 1930.

Q. At the date of that patent had the Cross Coal-O-Matic Company been making furnace installations covered by the invention in the patent?

A. Yes.

Q. And at that time was there on the market any control which was specifically adapted to close a switch on a temperature falling from 200 to 100?

A. No, there was not. You understand that was because of the desirable operating range. Your Honor, this 129 control to maintain a fire should turn on at, for example, 100 degrees, and then should turn off at approximately 150 to 200 degrees in the ordinary furnace installation. Is that clear?

Q. The switches which you were able to buy at that time had a much wider range, is that correct?

A. They had a wide range, but they were difficult to set as to a narrow range. Put it that way.

Q. Did the Cross Coal-O-Matic or any of its officers back in 1930 or 1931 ever ask any control manufacturer to bring out a stack switch for the express purpose of handling a falling temperature between 200 and 100 degrees?

A. Yes, I discussed that with manufacturers' representatives when I was with the Coal-O-Matic Company. I told them the difficulties that we had in securing the operation we wanted.

Q. Mr. Cross, where were the early experiments with the Cross furnace installation conducted?

A. They were conducted in the building of the Kansas City Testing Laboratory, one phase in its furnace plant, and in my home and the homes of others who were working for the company.

Q. In your experience with the Cross system used
130 in your home did you have any difficulties which might be attributed to the use of a conventional stack control failing to function properly for this specific problem?

A. I have had the personal experience that if the fire bed temperature maintenance controls were not in operation satisfactorily, the furnace would fill up with green coal and even flow out of the door of the furnace. That would have to be removed and the fire rekindled or started all over again.

Q. What was the first stack switch designed specifically for the problem of the Cross patent, with which you are acquainted, the first one that came on the market?

A. It is difficult to say which one was first. I could not tell you.

Q. Did the first control designed specifically to handle that problem of a declining temperature between 200 and 100 degrees come out before or after the issuance of the Cross patent?

A. It was after the issuance of that patent, to the best of my recollection.

Q. Prior to the Cross invention was there any demand for a stack control which performed the function of turning on a stoker on a falling temperature between 200 and 100 degrees?

131 A. No, there was not.

Q. Who built up that demand?

A. Well, the increase in sale of the small sized stokers literally built the demand.

Q. Was it in any way responsive to the Cross invention?

A. I do not believe I quite understand the question.

Q. Prior to the Cross invention was there any demand for a stack switch functioning as this M-61 functioned in the Smith home?

A. No, there was not.

Q. The Cross invention created such a demand, did it not?

A. Yes, it did.

Q. Installations employing the Cross invention are a product of that invention, or are they a product of the Stack switch?

A. They are necessarily a product of the invention.

Q. Did the Cross Coal-O-Matic Company and the Cross patent open up a new field of industry?

A. In so far as the new use of controls to accomplish

that purpose of maintaining a full fired stoker or fire bed, I think it did.

Q. And did it create a demand for controls that had 132 not existed theretofore?

A. Well, I would say it did, yes.

Q. Mr. Cross, will you briefly explain the circumstances of the Cross Coal-O-Matic Company going out of business?

A. Yes. In 1931 Walter Cross died. The Company had been a personal project of his and operated as such. After his death it was desired that the project be liquidated, rather than have the additional necessary money put into it to carry it to a possibly successful conclusion by a manufacturing company.

Q. At the time of the liquidation of the company, what was the approximate net loss?

A. About $200,000.

Q. What happened to the assets of the Cross Coal-O-Matic Company?

A. An arrangement was made with the Butler Manufacturing Company whereby they took a license under all the patents of the Cross Coal-O-Matic Company, took over the designs, drawings and parts of the manufacturing equipment of the company, and manufactured the stokers and sold them.

Q. When did the Minneapolis-Honeywell Regulator Company come into the picture, with respect to the Cross patent in suit?

133 A. In the latter part of 1931.

Q. Will you explain the circumstances and the relationship that was established at that time?

A. The Coal-O-Matic Company and the Butler Manufacturing Company decided that Minneapolis should have a license under the patent in issue here, as well as one other patent closely related to it. Both parties thought that they would like to have the Coal-O-Matic Company as owner of the patent join in a three way agreement, issuing a license to Minneapolis on that patent.

Q. I show you Plaintiff's Exhibit 6 and ask you if this is a correct copy of the license agreement between Cross Coal-O-Matic Company and Butler Manufacturing Company on the one hand and Minneapolis-Honeywell Regulator on the other?

A. Yes, it is.

Q. What motives controlled the heirs of Walter M. Cross in granting a license under the Cross patent?

A. That license was granted by Coal-O-Matic. It had been assigned ownership.

Q. That is right. But the Cross Coal-O-Matic Company was really owned by the estate of Walter M. Cross?

A. That is true.

Q. Why did they abandon operating the company 134 and turn to a licensing arrangement?

A. It was about the only way left that was practical to get any salvage from the company from the investments that had been put into it.

Q. What was the relationship of the Cross Coal-O-Matic Company to Minneapolis-Honeywell Regulator Company at the time that Plaintiff's Exhibit No. 6 was entered into?

A. No particular relationship, except that we did enter into that agreement at the request of the Butler Manufacturing Company.

Q. There was not any interlocking control between the two companies, was there?

A. No.

Q. Was there at any time during the life of the Cross Coal-O-Matic Company?

A. No.

Q. Am I correct in understanding that the license agreement, Plaintiff's Exhibit No. 6, is between two entirely independent contractors?

A. That is right.

Q. Did Butler Manufacturing Company's interest in the license agreement, Plaintiff's Exhibit No. 6, continue indefinitely?

A. No. It was stopped in 1933, I believe, by a can-
135 cellation of the agreement between the Mid-Continent Investment Company and the Butler Manufacturing Company.

Q. By that cancellation Butler Manufacturing Company just dropped out and left Mid-Continent Investment Company as licensor under the Cross patent in suit, is that right?

A. That is right, and that was provided for in the agreement.

Q. Is the license agreement, Plaintiff's Exhibit 6, still controlling the relationship between the plaintiff and Minneapolis-Honeywell Regulator Company?

A. No, it is not.

Q. What is that relationship now?

A. A new agreement was entered into between the Mid-

Continent Investment Company and the Minneapolis-Honeywell Company in, I believe, 1938.

Q. I show you Plaintiff's Exhibit 7 and ask you whether that is a correct copy of the license agreement entered into by the plaintiff and Minneapolis-Honeywell Regulator Company towards the end of 1938?

A. Yes, it is.

Q. Is that license agreement still in operation?

A. Yes.

Mr. Stone: I will offer PLAINTIFF'S EXHIBITS 6, 7 and 8.

136 (The exhibits were so marked.)

Mr. Stone: Q. Briefly, are there any differences between the present license agreement, Plaintiff's Exhibit No. 7, and the original license agreement, Plaintiff's Exhibit 6?

A. Yes. There are two essential differences. One is that the minimum annual royalty called for in the original agreement has been stricken and the royalty minimum of 75 cents per control has been changed to a flat five per cent royalty.

Q. Mr. Cross, at the time that Plaintiff's Exhibit 6 was entered into what was the average selling price of a stack switch designed for this particular purpose?

A. It was in the neighborhood of fifteen to twenty dollars.

Q. And what was the original understanding between you and Minneapolis-Honeywell as to what per cent of the selling price you should get?

A. It was to be five per cent, and the agreement as to the 75 cents per control came from the five per cent of the selling price of the control at that time.

Q. Seventy-five cents is five per cent of how much?

A. Fifteen dollars.

Q. Now, Mr. Cross, between 1931 and 1938 will you
137 describe the price trend on this type of control?

A. The trend was downward, until it reached a price, according to my understanding, of about eight dollars today.

Q. In other words, during this entire period competition was driving the price of that particular stack control downwardly, was it not?

A. Yes.

Q. In 1931, based on the eight dollar or nine dollar

price per control, a minimum of 75 cents would be about what royalty?

A. Very nearly ten per cent.

Q. To your knowledge when did The Mercoid Corporation, the defendant herein, first bring out a stack switch designed specifically for use in a stack of this type of installation?

A. To the best of my knowledge, it was in the latter part of 1933 or the early part of 1934.

Q. Do you recall the number of that stack switch?

A. I think it was the M-61.

Q. Mr. Cross, I am going to read you the first paragraph of Plaintiff's Exhibit 6, and I want you to tell us whether there was any other understanding between you
9 and Minneapolis-Honeywell Regulator Company as 138 to the manner of using the Cross patent.

"Cross and Butler jointly and severally grant to Minneapolis the sole and exclusive right and license to make, use and sell and to sub-license others to make, use and sell, the inventions disclosed in said patents as applied to coal stokers, and all improvements thereon which inventions and improvements may be the subject of patents, or divisions, renewals, continuations and or reissues thereof, now or hereafter owned, controlled and or acquired by Cross, and or Butler, throughout the territory of the United States and its possessions for the life of said patents, unless said rights and license are sooner terminated in accordance with the provisions hereof."

A. That was the entire agreement between us as to the operation of the patents.

Q. In Plaintiff's Exhibit 7, which is the 1938 license agreement, that paragraph which I just read in Plaintiff's Exhibit 6 is duplicated as paragraph No. 1?

A. Yes.

Q. Does paragraph No. 1 of Plaintiff's Exhibit 7 contain the entire arrangement as to how Mid-Continent was to exploit the patent with reference to Minneapolis-Honeywell?

A. Yes.

Mr. Stone: I would like at this time to offer in evidence PLAINTIFF'S EXHIBITS 1, 2 and 3.

139 The Court: As I understand it, all exhibits will go in, unless there is objection.

Mr. Moore: No objection, your Honor.

The Court: I say, it will be understood that they will be admitted, unless I do hear an objection.

Mr. Moore: Yes, sir.

(The exhibits were so marked.)

Mr. Stone: Q. Back in the years 1932-1933 was the validity of the Cross patent questioned by anyone?

A. No, not that I know of.

Q. By 1934 or 1935 had there come on to the market controls designed for this specific purpose?

A. Yes, there had. Nearly all control companies had this type of control and description of installation.

Q. What was your understanding of your obligation to protect the Cross patent?

A. Well, it was set out in our agreement, our license agreement. As I remember it, we had the right to sue infringers, or Minneapolis had the right to sue infringers, or we could agree to jointly do so.

Q. Did you bring any suits against infringers?

A. Yes, we did, several times.

Q. Were those suits brought by the Mid-Continent Investment Company alone?

140 A. Yes.

Q. Why was that?

A. Well, we felt that if the patent was to be of value and if our licensee would continue to pay royalties we had to have an adjudication of the patent and stop infringements that were necessarily giving them difficulties themselves.

Q. Did you bring a suit against a man named Smith in Carthage, Illinois?

The Court: Missouri.

Mr. Stone: Q. Carthage, Missouri, I mean.

A. Yes.

Q. How did you happen to bring that suit against him?

A. Well, we made quite a search to find an actual infringer and bring in definite proof of infringement, and we did that in our own district in Kansas City.

Q. It is sometimes difficult to find an actual infringer, is it not?

A. Yes, it is.

Q. After the filing of that suit in the Southwestern Division of the Western District of Missouri, did Mid-Continent, the plaintiff, bring any other suits concurrently against anybody else?

A. No.

141 Q. Why not?

A. Well, we felt that one suit was sufficient to validate the patent and we did not look for anything further at that time.

Q. Why didn't you bring suit against The Mercoid Corporation, which had made the controls that were in the Smith installation?

A. We felt that proper validation required suit based on an actual infringement and installation, what we considered in violation of the patent.

Q. Did the fact that The Mercoid Corporation was defending that suit deter you from bringing a suit directly against them?

A. No, it did not.

Q. How much money did you spend in prosecuting that Kansas City suit for legal fees and disbursements, approximately?

Mr. Moore: I object, your Honor. That is nothing relevant to the present case, how much of they spent in legal fees in defending another suit.

Mr. Stone: I think it is very relevant, your Honor, because one of the defenses here is the defense of laches. Here is a plaintiff, as I am going to bring out in a minute, drawing maybe a couple of thousand dollars a
142 year from a patent, prosecuting a suit against a direct infringer in Kansas City at an expense to him of between four and five thousand dollars over a period of three or four years.

The Court: How is the amount material? How is that determinative in the lawsuit?

Mr. Stone: It shows the reason for not bringing a suit against them during that time. After all, they were defending that suit. They say we were guilty of laches.

The Court: How is the amount expended material?

Mr. Stone: There is a reasonable extent to the amount of money one can put into lawsuits. After all, they are maintaining—

The Court: He gave the reason why they did not want to sue The Mercoid Company. He said they wanted to validate the patent first and that would be sufficient. That is what the witness said. Objection sustained.

Mr. Stone: Q. When was that suit finally terminated, approximately?

A. I believe the appeal was terminated in 1939.

Q. In any of the suits brought by the Mid-Continent Investment Company did any party other than the Mid-Continent Investment Company contribute to the ex-
143 pense of maintaining the litigation?

A. No.

Q. Who are the direct infringers of the Cross patent in suit, generally speaking? Classify them.

A. The users and purchasers of individual stoker units.

Q. Are these very numerous?

A. Yes, they are.

Q. Would it be feasible to bring a suit against all of the direct infringers of the Cross patent?

A. No, I do not see how it would be feasible at all.

The Court: Q. Did I understand you to say that every individual user of a stoker is an infringer and violator of the patent; is that your understanding?

A. Every user of this combination control.

Q. That does not mean every user of a stoker?

A. If they happen to have this type of combination.

Q. That is, in connection with the combination?

A. That is right.

Q. There could be stokers operated without it?

A. Oh, yes.

The Court: Go ahead.

Mr. Stone: Q. At the time that the Cross Coal-O-Matic Company was developing this system, was there another system of controls for stokers?

144 A. Yes.

Q. Will you describe that system?

A. You mean as to fire bed maintenance?

Q. Yes.

A. There was one other system that we knew of, consisting of a timer control, and this operated for a given interval of time at predetermined intervals. For example, it might operate three minutes out of every hour.

Q. Has that system of controlling a stoker been continuously in competition with the Cross system of controlling a stoker?

A. Yes, it has.

Q. Of the two systems, which is the more popular?

A. I cannot say. I do not know the sales.

The Court: Very modest.

Mr. Stone: At this time, your Honor, I would like to offer in evidence some of the circulars which have been put out by the defendant, The Mercoid Corporation.

These were produced by the defendant in response to my request and have been identified in response to my interrogatories as being valid.

Plaintiff's Exhibit 4, being page 4 of Mercoid Catalog 100, dated February 1, 1936.

(The exhibit was so marked.)

145 Mr. Stone: Plaintiff's Exhibit 12, Bulletin No. 240 of the Mercoid Corporation. Your Honor might be interested in this exhibit. It is one of the early ones which they brought out of the type M-61 control, and it shows you the system. The top diagram there will show you a system similar to this. We are going to discuss that exhibit in detail. But those are the type of circular in which they actively promoted the infringement of our patent.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 10, being Bulletin No. 241-A of The Mercoid Corporation.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 11, being page 24 of Catalog No. 100, dated February 1, 1936, of The Mercoid Corporation.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 14, being an advertisement of The Mercoid Corporation appearing in Coal Heat Magazine for November, 1933.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 15, being form P-90, installation instructions of The Mercoid Corporation, September, 1937.

146 (The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 16, being the front page of a bulletin issued by The Mercoid Corporation on the Mercoid Stokatherm, type JMV.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 17, being a circular letter dated August 7, 1936, on the stationery of the Mercoid Corporation.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 18, being a copy of a report by the Anthracite Institute Laboratory, No. 2192, on the Mercoid Stokatherm, type JMV, addressed to The Mercoid Corporation.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 19, being a copy of Bulletin No. 242 of the Mercoid Stokatherm, type JMV, dated 6-36.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 20, being General Applications and Wiring Diagrams of The Mercoid Corporation.

Mr. Moore: There are no identifying marks as to the date of the publication of this General Applications and Wiring Diagrams, but no objection will be made to 147 introducing it in evidence.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 21, being a bulletin of The Mercoid Corporation covering Mercoid controls-furnace-stoker, etc., Form A-33.

Mr. Moore: There is no date or other identifying the publication of this bulletin, but no objection will be made to its being introduced in evidence.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 22, being an advertising circular of The Mercoid Corporation, there being no date shown.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 23, being a letter on The Mercoid Corporation letterhead, dated January 22, 1934, entitled Mercoid Controls—Manufacturers Schedule, this being a form letter.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 24, being marked Bulletin Form No. A-51, dated January 15, 1934, and entitled "Manufacturers Prices."

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 25, being copy of two clippings from magazines, one from the American 148 Artisan, dated July 19, 1932, and the other from Heating, Piping and Air Conditioning magazine for July, 1932.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 26, being copy of four clippings from magazines, the first being from Sheet Metal Worker for November, 1929, the second from Sanitary Heating Age for August, 1929, the third from Fuel Oil Journal for April, 1928, and the fourth from Warm Air Heating for December, 1929.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 29, being a page from Mercoid Bulletin A-14, relating to the M-61 stoker control.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit 30, being a copy of page 38 of defendant's catalog No. 400, dated February, 1940.

(The exhibit was so marked.)

Mr. Stone: Q. Mr. Cross, after the issuance of the Cross patent did the Coal-O-Matic Company mark their patent installations with the patent number?

A. Yes, I think they did.

Q. Has that been done, so far as you know, by the Minneapolis-Honeywell Regulator Company?

149 A. It is my information that it has been done.

Mr. Stone: That is all.

The Court: Have you finished your direct examination?

Mr. Stone: Yes.

The Court: We will take a recess for about ten minutes.

(A short recess was here had, after which the proceedings were resumed as follows:)

150 Mr. Stone: The plaintiffs offer in evidence Plaintiffs' Exhibit 42, which is a Mercoid Stokathern Type TJV, and which is the property of the Mercoid Corporation loaned to the plaintiffs for the purposes of this trial, and is to be returned to the defendant after the case is ultimately terminated.

Plaintiffs offer Plaintiffs' Exhibit 43, being a M-11 Pyratherm made by The Mercoid Corporation, and owned by the defendant, which has been loaned to the plaintiffs for the purposes of this case and is to be returned after ultimate decision to the defendant.

Plaintiffs offer Plaintiffs' Exhibit 44, which is a Type JMV Stokatherm, and the defendant stipulates that the plaintiff purchased this in the open market.

Mr. Moore: May it please your Honor, if these physical exhibits are going to be relied upon to prove contributory infringement of this patent, objection is made to them, because it was stated in answer to a bill of particulars that Mid-Continent would rely upon the installation in the Smith home to prove infringement. Now, these are not the articles that were installed in the Smith home. They are later developments and an entirely different article

than was before the court in the Mid-Continent versus Smith case.

151 The Court: Why are they being introduced then?

Mr. Stone: They are being introduced on the theory that they are the equivalent of the control that was mounted in the Smith home. Now, the gravamen of a cause of action for contributory infringement set out by our own Circuit Court of Appeals in Lincoln *vs.* Stewart-Warner is the act of making an article for the specific purpose and with the knowledge that it shall be placed in an infringing installation.

Your Honor, this is the infringing installation (indicating on chart). This is the basis of our lawsuit and was the basis of the lawsuit in Missouri.

The Court: That is the Missouri lawsuit, is it not?

Mr. Stone: That is right. After we had brought a suit on this control the defendant came out with these two controls. (Indicating articles.) We propose to show these are the equivalents of the M-61, and likewise infringements.

The Court: Then why did you state in your opening remarks that you were going to restrict your proof to the evidence introduced in the Missouri lawsuit?

Mr. Stone: Oh, no. I thought, your Honor, I said on the direct infringement question. You see, we have tried the subject of direct infringement. We have estab-

152 lished as against the defendant the fact that this installation does constitute a direct infringement of the Cross patent.

Now the problem we have here is to show that this defendant manufactured that control for the purpose of enabling others to infringe it, and what I propose to show by means of these other controls, which are newer and more recent controls—this control, for example, is the current control—is that it is the equivalent of this control for the purpose of creating the infringing installation.

Now Mr. Moore said that in response to his bill of particulars I said that I was going to confine myself to the Smith installation. I specifically replied in the bill of particulars, and you will recall that there were two of them, and the second one was brought because I refused to answer as he thought I should, that the M-61 we did consider to be contributorily infringing, but that we did not know whether or not there were other controls that

the defendant was making which were the equivalent of that control. Thereafter we investigated their catalogs and their products and we found these two or three controls. There is really one set and a single control.

153 Mr. Moore: May it please your Honor, we have not contended in this suit so far that the Cross patent is invalid. We have admitted the validity as far as it went in connection with the M-61 when used in a system. Now, if the plaintiffs are not relying upon the same controls that were used in the Smith residence, the defendant then will be entitled to take up the question of validity of the Cross patent, because the parties here are not the same as the parties in the Smith suit. It is the Mid-Continent Investment Company *vs.* The Mercoid, the manufacturer, not the user, and then the articles, the accused devices, are different. So there can be no question of The Mercoid Corporation being prohibited by that decision or estopped by that decision from denying now the validity of the Cross patent.

Mr. Stone: Your Honor, that suit decided, so far as The Mercoid Corporation was concerned, whether or not this patent was valid. Now they have the right to contest this infringement by these new controls that they have brought out. We do not deny that. But our bill alleges and we are going to prove that these controls are the equivalent of the infringing control down there. It does not add up, your Honor, to say that a defendant can make an infringing installation with a particular control,

154 try out a whole lawsuit, and then escape the effects of that lawsuit by making some trivial changes and applying a new type number to an infringing control.

The Court: I think I will let those three exhibits in. (The exhibits were so marked.)

*Cross-Examination by Mr. Moore.*

Q. Mr. Cross, we have met before, have we not?

A. Yes.

Q. You testified in the Mid-Continent *vs.* Smith case?

A. Yes.

Q. I believe at the beginning of your testimony you stated that the Cross Coal-O-Matic made stokers, did you not?

A. Yes.

Q. What was the relation of the Butler Company to the Cross Coal-O-Matic; did they not furnish the stokers to the Cross Coal-O-Matic?

A. No, that was never true.

Q. What did they furnish?

A. The Coal-O-Matic Company sold its fixed assets, so to speak, that is, certain drawings, patterns, and gave license under all of its patents to Butler.

155 Q. The Cross Coal-O-Matic assembled the controls that it bought on coal stokers and installed them, did it not?

A. Well, it depends on how you speak of assembling them. These controls, of course, were not put on to a stoker. They were placed in connection with a stoker on a heating system.

Q. On the premises?

A. That is right. No, I beg your pardon; on the factory premises?

Q. No, on the premises where they were installed.

A. Yes.

Q. And the Cross Coal-O-Matic installed them in the homes?

A. Yes.

Q. And serviced them for a number of years?

A. Yes.

Q. I believe you stated what the range of the limit controls in hot air furnaces such as this M-51 were back in 1925 and 1926, did you not?

A. Yes.

Q. And what is the range in which those furnace controls are calibrated for, do you know?

A. The ones I had any experience with were from 100 to 600 degrees Fahrenheit.

156 Q. From 100 to 600?

A. Right.

Q. And what did you say was the change in the temperature in the stack, when they used the stack control?

A. I do not believe I am quite clear as to your question.

Q. I believe you gave the ranges of the stack controls used in the stack of a hot air furnace, did you not?

A. That is where a limiting control was used, yes.

Q. And how were they calibrated?

A. They were from 100 to 600 degrees.

Q. You are already familiar with the Cross patent in suit, are you not?

A. Yes.

Q. And that shows, does it not, the whole fire control inserted in the firebox of the furnace?

A. Yes.

Q. Did Cross Coal-O-Matic ever instal control systems in which the whole fire control was placed in the firebox of the furnace?

A. Yes, I believe that was done a few times.

Q. Only one or two?

A. I would not limit myself to a specific number.

Q. The temperature of the furnace at that point 157 would be sufficient to burn them up ordinarily, would it not?

A. No, we installed them usually in the firing door of the furnace, and the temperature there was not sufficient to burn them up.

Q. But not in the fire pot just above the place where the combustion takes place of the fuel, as shown in the Cross patent?

A. Well, I think you could consider it just above the fire pot, because it was in the front door of the furnace.

Q. You have referred to stack breeching?

A. Yes.

Q. Stack controls throughout your testimony this morning, and my understanding of your testimony this morning and in the Mid-Continent suit was that the limit controls for preventing the fire from going out was always placed in the stack or breeching of the furnace as far as you know, except those few instances in the early days of the Cross Coal-O-Matic Company, is that correct?

Mr. Freeman: Are you talking about the installation in Missouri?

Mr. Moore: Will you please repeat the question?

(The question was read as above recorded.)

A. They usually were installed there.

Q. And how were these limit controls placed in the stack calibrated, do you remember?

A. The low fire limit controls?

Q. Yes.

A. They had a range of ordinarily 100 to 600 degrees.

Q. Well, then, the range of the limit control in the stack for preventing the fire from going out was the same

as the ordinary stack switch used for other purposes, is that correct?

A. The total range was.

Q. From 100 to 600 in both cases?

A. As to the total range, yes.

Q. And they could be set at any place between 100 degrees and 600 degrees, when they would operate?

A. To turn on?

Q. To turn on and off?

A. Well, you had to have a differential between the turn-on and the turn-off points.

Q. Well, the limit control in the bonnet of the furnace, the furnace control; did you say what that was set for ordinarily?

A. I believe I said in the neighborhood of 400 degrees.

Q. Yes. Now, if this particular instrument is set for 400 degrees and the temperature within the furnace rises to 400 degrees, what happens?

159 A. The control shuts off.

Q. Then the switch opens, does it not?

A. That is right.

Q. And stops the motor?

A. That is right.

Q. When does it close again after it reaches that 400 degrees?

A. Well, in the controls about which I was speaking and had experience with at that time there was about a 100 to 200 degree drop, and it was difficult to control that particular range.

Q. I am speaking about the furnace control. Is that what you have reference to?

A. Yes.

Q. And you say it was generally set for what, 400?

A. I would say 400.

Q. And then the fire, the temperature, could decrease to about 200?

A. Yes.

Q. Before it would start operating again?

A. Yes.

Q. What was the setting on the limit control used as a fire maintenance control? Do you remember?

A. That was ordinarily set to make contact at about 160 100 to 125 degrees.

Q. That is, when the temperature in the firebox

decreased to 100 or 125 degrees, the switch would close the circuit of the motor, is that correct?

A. Well, to be specific, the temperature would have to be where the heat responsive element was placed.

Q. Yes. And that, if it were in the breeching, would be here? (Indicating.)

A. Yes.

Q. And then that would operate your stoker until the temperature came up?

A. That is right.

Q. How much of a lag would there be or difference before that limit switch in the breeching for fire maintenance would open the circuit?

A. We used to use a differential from 50 to 60 or 70 degrees.

Q. The differential, then, if it closed at 100 or 125, when it increased between 50 to 150 would open the circuit, is that correct?

A. That is correct.

Q. I believe you stated there were no switches especially designed for the purpose of this limit control which acted as a fire maintenance control until after the 161 Cross patent was granted, is that correct?

A. That is my understanding.

Q. But there were controls on the market as stack controls, were there not, at the time?

A. Yes.

Q. And they had a range calibrated from 100 to 600 degrees, is that correct?

A. Yes.

Q. And you state that a furnace control, if set for 400, would open when the temperature reached 400 and would close when it dropped to about 200, is that correct?

A. Yes; that was one possible combination.

Q. All right. And you also stated that a stack switch or limit control which was placed in the breeching as a fire maintenance control was usually set at 100 to 125 degrees, so that when the temperature descended to 100 or 125 degrees the circuit would be closed to the motor and coal would be fed until the temperature in the fire box rose 50 or 150 degrees above the normal setting, that is, 125, so the temperature would reach or have to reach 200 or 300 degrees before the coal stoker would stop; is that correct?

A. That control, if wired properly, would do that, and

ordinarily, I believe I said, turned off with a tem-
162 perature rise from 50 to 75 degrees to prevent over-heating of the house.

Q. Then there were on the market at the time the Cross patent was filed stack controls which could be adjusted from 100 to 600 degrees, and could be adjusted at 100 to 125 degrees and used as a limit control for fire maintenance, were there not?

A. The difficulty we had was in the differential temperature; that is, in acquiring a small differential, put it that way. We could set it to turn on at 100 if connected in parallel circuit, but had difficulty, though, in having it open again in less than 100 to 150 degrees, which made a good deal more heat output from the furnace.

Q. Have you ever had any experience with oil burning heating systems?

A. Some small experience.

Q. They employ usually a stack safety device, do they not?

A. Some of them do, yes.

Q. Some of them do, yes. It is about the same stack safety as you employ in the Cross patent?

A. Well, it is on a different theory, Mr. Moore; that if it is connected in an electrical series with the thermostats and other controls, then it will prevent overheating
163 in the stack.

Q. I believe you stated that the Cross patent brought a demand upon the control manufacturers to produce a limit control with a range of from 100 to 200, did you not?

A. Yes, it apparently did.

Q. You also stated that the advent of this Cross patent added greatly to the domestic coal heating systems, and, in fact, I understood you to say that the Cross Coal-O-Matic system was a system that caused the popularity of coal stokers; is that correct?

A. I do not remember having said that this morning.

Q. Well, it is so?

A. Yes, I think it did a great deal to increase it.

Q. Of course, the Iron Fireman was pretty well known at that time, too, was it not?

A. That is right.

Q. And rather a large competitor, too?

A. Somewhat larger than we.

Q. It is a fact, is it not, Mr. Cross, that the Cross

Coal-O-Matic Company and Mid-Continent Company have always had very friendly relations with The Mercoid Corporation until the Mid-Continent *vs.* Smith arose?

A. Yes, I should say so.

164 Q. Well, Mr. Colterjohn and myself accompanied you and Mr. Marshall in your car and you drove us down from Kansas City to inspect the Smith residence, did you not?

A. That is right.

Q. And you stipulated down there and we stipulated down there that this drawing was a drawing of the wiring diagram of the Smith residence?

A. Yes.

Q. And I believe you made a statement to me in the presence of Mr. Walter Colterjohn at that time that the relationship had always been very friendly between our companies, and that you did not want to bring this suit against The Mercoid Corporation, but were compelled to do so to protect the interests of your licensees, is that correct?

A. Well, I do not remember that distinct statement, but it was in our interest to maintain the patent.

Q. I believe you stated in your direct examination that the reason you waited until 1935 to bring a suit against Smith in Carthage, Missouri; was that it was difficult to find users who infringed the Cross patent. Do you remember saying that this morning?

A. Yes, I said it was difficult to find them.

Q. Well, when the bill of complaint alleges that 165 there are hundreds and hundreds of these infringing installations being used, why did it take you five years to locate the installation in Carthage?

A. Well, we were naturally trying to hold the expense of the litigation as low as possible, and we tried to find one in our district which would not entail the expense of a trial out of the city, for one thing. Then we had also the Penn Electric Switch situation and we did not like to have too many lawsuits at one time.

Q. Well, that was the Mid-Continent *vs.* Schermes?

A. That is right.

Q. And that was the Penn Electric Switch limit control used to maintain a fire?

A. Yes.

Q. And that suit was brought in Kansas City?

A. Yes.

Q. And that was in 1933?

A. I believe it was.

Q. Before you brought suit against Smith?

A. Yes.

Q. I believe you have heretofore identified the license agreement entered into on the 23rd day of December, 1931, by and between Cross Coal-O-Matic Company and the Butler Manufacturing Company with Minneapolis-
166 Honeywell Regulator Company, which has been introduced as Plaintiffs' Exhibit 6?

A. Yes.

Q. You, as secretary of the Cross Coal-O-Matic Company at that time,—and I believe you stated you were, did you not?

A. I am sure I was.

Q. You were thoroughly familiar with the contents of this license agreement, were you not?

A. I think so.

Q. I wish you would read paragraph 2 on page 3 of this exhibit, Plaintiffs' Exhibit 6.

A. "It is jointly and severally agreed by all of the parties hereto that royalty payments to be made hereunder shall be made or based only upon what are known to the parties hereto as a 'combustion stoker switch' which is specifically herein defined as a combination stoker control unit including an automatic electric switch responsive directly to temperatures of combustion gases or boiler water produced by an automatic coal-fuel stoker and adapted, in combination with other devices and apparatus for the control of automatically operated coal-fuel stokers, to prevent the extinguishment of its fire when operating under low heat requirement conditions."

167 Q. Then I understand that the royalty paid by Minneapolis-Honeywell Regulator Company to Cross Coal-O-Matic and the Butler Company were based only upon what is known to the parties as a combination stoker switch, is that correct?

A. I believe that is the way it reads.

Mr. Stone: Your Honor, I do not think that question is complete, "when used with the rest of the equipment named."

Mr. Moore: Well, I will read what it states.

The Court: If that is the way it reads; whatever it is it reads, is that the answer?

Mr. Stone: The document speaks for itself, Mr. Moore.

Mr. Moore: I would like to read the document into the record so that the court will have it before it.

Mr. Stone: He just read it.

Mr. Freeman: The witness just read it, did he not?

Mr. Moore: I am emphasizing part of what he did read; "that royalty payments to be made hereunder shall be made or based only upon what are known to the parties hereto as a combustion stoker switch which is specifically herein defined as a combination stoker control unit including an automatic electric switch responsive directly to temperatures of combustion gases or boiler water produced by an automatic coal-fuel stoker."

168 Then it says, "and adapted" for certain purposes, which is an explanatory clause and does not add anything to the definition of the article upon which the licensee paid royalties to the owners of this patent.

Q. You are also familiar with the claim of the Cross patent, I believe?

A. I have not read them for quite a little while, but I know their content.

Q. You have testified as to them before, as to the scope of those claims?

A. Yes.

Q. I ask you wherein you find defined in the claims of the Cross patent a combustion stoker switch.

Mr. Stone: Your Honor, I object to that question, on the ground that it is a question properly directed to an expert witness. Mr. Cross is not qualified as an expert.

Mr. Moore: Your Honor, he did so qualify the last time he was on the stand.

The Court: I thought he said he was familiar with the claims of the patent.

Mr. Stone: As to their interpretation, your Honor.

The Court: He may answer that question.

Mr. Moore: Q. Mr. Cross, if you are not thoroughly familiar by inspecting them lately, I will hold that
169 question until tomorrow and let you read the claims before you answer it, if you care to.

The Court: I think that would be more fair to the witness.

A. I think that would be better.

Mr. Moore: I think that would be more fair, your Honor.

The Court: Yes, sir.

Mr. Moore: Q. Now, the plaintiff Mid-Continent also introduced into evidence another license agreement, Plaintiff's Exhibit 7, which is an exclusive license agreement granted by the Mid-Continent to Minneapolis-Honeywell Regulator on the 31st day of December, 1938. I believe you explained, did you not, in your direct testimony, how this second exclusive license agreement was executed?

A. Yes.

Q. Will you please read paragraph 2 on page 2 of this exclusive license agreement of December, 1938, Plaintiffs' Exhibit 7?

A. "It is jointly and severally agreed by the parties hereto that royalty payments to be made hereunder be made or based only upon what are known to the parties hereto as a combustion stoker switch, which is spe-
170 cifically herein defined as a combination stoker control unit, including an automatic electric switch responsive directly to temperatures of combustion gases or boiler water produced by an automatic coal-fuel stoker and adapted, in combination with other devices and apparatus, for the control of automatically operated coal-fuel stokers to prevent the extinguishment of its fire when operated under low heat requirement conditions."

Q. That is the same, is it not, as paragraph 2 in the original?

A. I believe it is.

Q. In the original or first exclusive license of December, 1931, I wish you would read paragraph 3 on page 3.

A. "Minneapolis agrees to pay as earned royalty for each licensed combustion stoker switch made and sold by it and by any of its sub-licensees pursuant to the provisions of this license the sum of 5 percent of the net sales price of each combustion stoker switch; provided, however, the minimum royalty per switch shall not be less than seventy-five cents."

Q. My understanding of that clause is that Minneapolis-Honeywell agrees to pay a royalty on each combustion stoker switch made and sold by it, is that correct?

171 Mr. Bair: That is objected to. The contract determines what it means, not what counsel understands.

The Court: The objection is good. The contract means what it says.

Mr. Moore: Q. Section 3 then specifies the royalty paid

by Minneapolis-Honeywell to the grantors of this license upon each licensed combustion stoker switch?

Mr. Bair: That is objected to as calling for secondary evidence.

The Court: Calling for what?

Mr. Bair: For secondary evidence. The contract itself being the best evidence as to what it calls for.

The Court: Oh, I think he may answer that question. What you are trying to get at, Mr. Moore, as I get it from what you read, is that there was an agreement between these two companies whereby one was to pay 5 percent on each of the switches provided it shall not be less than 75 cents?

Mr. Moore: I would like to show your Honor that the royalty on this license is based on the switch, the instrument per se, not upon the system, as described in the Cross patent in suit.

The Court: Does that not say it is based on the switch?

Mr. Moore: It does say it, and I want it to be
172 clearly brought out in the record.

Mr. Stone: When used in the system.

The Court: Are you adding something?

Mr. Stone: That is exactly what he left off, that paragraph.

The Court: Sir?

Mr. Stone: That is what he left off of it before; the granting paragraph is the controlling paragraph.

The Court: The contract speaks for itself.

Mr. Stone: That is the way I feel about it.

The Court: Let us not get into any dispute about that. It was signed several years ago.

Mr. Moore: Q. Now, I would like you to read the corresponding paragraph 3 on page 3 of the later license, dated December 3, 1938. I think if you will read the first paragraph that is all that is necessary.

A. "Minneapolis agrees to pay an earned royalty on each licensed combustion stoker switch according to the following method of computation: At the end of each calendar year—"

Q. That is all. You need not read the rest of it.

In this original agreement of December, 1931, there is something said about patent marking, is there not?

A. I cannot be sure.

173 Mr. Bair: The contract, your Honor, speaks for itself.

Mr. Moore: I would like to read into the record if this license requires that each article sold bears the patent notice of the Cross heating system patent.

The Court: I thought that whole document was in the record.

Mr. Stone: It is.

Mr. Moore: The whole document is in, but I would like to have it in the record to show that this license required the licensee to mark the article with the Cross system patent, and it is here somewhere.

The Court: If it is all in there, why isn't that in?

Mr. Moore: I wanted to emphasize it, your Honor, if I could.

The Court: Suppose we take a recess until tomorrow morning at ten o'clock.

(Whereupon an adjournment was taken to Tuesday, September 9, 1941, at 10:00 o'clock a. m.)

174 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company, *vs.* The Mercoid Corporation. } Before Igoe, J.

Tuesday, September 9, 1941, 10:00 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Bair, Freeman, Moore.

WALTER M. CROSS, JR., a witness on behalf of plaintiffs having been previously duly sworn, resumed the stand and testified further as follows:

*Cross-Examination by Mr. Moore (Resumed).*

Q. You knew, did you not, before Mid-Continent brought suit against Smith that the heating system in the Smith home was installed by the Galena Machine and Electric Company?

175 A. I could not be sure who it was installed by.

Q. You knew, did you not, that the coal stoker and

the Mercoid controls were not installed by The Mercoid Corporation?

A. That is my information.

Q. Mr. Walter M. Cross, Sr., was the president of the Cross Coal-O-Matic Company, was he not?

A. Yes.

Q. And you were secretary and treasurer?

A. Yes.

Q. And you stated you were his son?

A. Yes.

Q. Mr. Forbes Cross was the vice president of the Cross Coal-O-Matic, was he not?

A. Yes.

Q. Is he any relation to you?

A. He is my brother.

Q. Your brother?

A. Yes.

Q. I believe you stated yesterday that the Cross Coal-O-Matic Company purchased quite a number of its controls from the American Radiator Company, did you not?

A. Yes.

Q. And you purchased Mercoid controls from the 176 American Radiator Company, did you not?

A. I am not sure whether it was Mercoid or not. There was the Federal Gauge and the Detroit Lubricator Company both.

Q. The Federal Gauge controls were called Mercoid controls, though, were they not?

A. I believe they were.

Q. I believe you stated yesterday in reference to this M-51 control shown on Plaintiff's Exhibit 37, that the control shown here was to prevent excessive temperature in the air that is going through the pipes or through the bonnet into the furnace, did you not?

A. Yes.

Q. And you also stated that such a limit switch or control could be placed in the stack, indicated by 8a and 8' on the diagram, did you not?

A. Yes.

Q. Then the M-51 control could be placed right alongside of the M-61 here, could it not?

A. Yes.

Q. Do you remember when you visited the Smith installation, at the time we went down together and checked on the M-51 and the M-61 as installed in that residence

how these two instruments were calibrated and how
177 they were set? Now I shall refresh your memory by referring to page 40 of the record, Plaintiff's exhibit 27.

Mr. Freeman: Why don't you just read from the record, because the record says it.

Mr. Moore: It is the stipulated statement as to the construction that accompanied this diagram.

Q. If you will glance at that you will see the calibration and the setting, in the middle of the second paragraph, where it states: Mercoid M-51, range 50 to 650, which is set at about 200 low and 228 high." Is that correct, Mr. Cross?

A. Mine reads M-51 and 200 low and 238 high.

Q. Yes; and that the M-61 range is 50 degrees to 650 degrees, which is set at about 115 low and about 150 high?

A. Yes.

Q. And that was the setting that we found in the Smith residence, was it not?

A. Yes.

Q. According to that stipulation?

A. Yes.

Q. And M-51, which is shown there in the bonnet, has a range of 50 to 650, has it not?

A. Yes.

178 Q. And that furnace control could be set or could be adjusted to be set at 115 low and 150 high, could it not?

A. Yes.

Q. And that was the setting that you found on the M-61?

A. Yes.

Q. So the M-51 would be set at the same setting to operate at the same temperatures as the M-61, is that correct?

A. Yes.

Q. If that is the case then the M-51 could be used in the stack at that setting, 115 low and 200 high, for the M-61, could it not?

A. Yes, it could be.

Q. And it would operate in the same way?

A. Under those circumstances, it would. That is assuming, of course, your difference in connection.

Q. What?

A. I assume you take into account your difference in electrical connections.

Q. Would they affect the operation of an instrument very much?

A. Well, they would affect its function, determine its function.

Q. Well, I merely ask you if the M-51 set at 115 low 179 and 200 high,—that was the setting on the M-61, was it?

A. Yes.

Q. And I asked you if you put the M-51 with that setting in place of the M-61 on this diagram, would it operate in the same manner as the M-61?

A. That is right.

Q. And there would be no difference in electrical connections, because this one would be merely substituted for that one? (Indicating on chart.)

A. That is correct.

Q. Then the M-51 in that position and at that setting would act as a low temperature control, would it not?

A. Yes.

Q. To maintain that fire?

A. Yes, it would.

Q. In the same manner as the M-61?

A Yes.

Q. I believe you stated yesterday that at the time the Cross patent was issued in 1930 there were no controls on the market which were especially adapted to close a switch on a temperature falling from 200 to 100 degrees, is that correct? There was no control on the market when the Cross patent was granted in 1930 that was specif-
180 ically adapted to close a switch on a temperature falling from 200 to 100?

A. That must have been in relation to something else.

Q. I can read what you said on page 74 of the record. The question reads:

"At that time was there on the market any control which was specifically adapted to close a switch on a temperature falling from 200 to 100?"

And you answered:

"No, there was not. You understand that was because of the desirable operating range. Your Honor, this control to maintain a fire should turn off at approximately 150 to 200 degrees in the ordinary furnace installation."

That is your testimony of yesterday.

A. Yes. What I intended—

Q. Go ahead. Do you want to change it?

A. What I intended to convey was the fact that in my experience at that time we had difficulty in obtaining a differential such as is represented here in this installation.

Q. Well, now, if there was on the market at that time, or at the time, rather, that Walter Cross filed his application in 1926, a limit control which was capable of operating between 100 degrees low and 200 degrees high, 181 it would have been capable of use in the Cross system, would it not?

A. Yes, to a limited extent.

Q. But it could be used?

A. That is correct.

Q. Now you find that the M-51 Mercoid control would be set—

The Court: You are pointing to M-61.

Mr. Moore: That is what I meant.

The Court: You said M-51.

Mr. Moore: I corrected myself. I meant M-61. It is rather difficult with these M-51's and M-61's. It is the M-51, you are right.

The Court: Which is it?

Mr. Moore: M-51.

The Court: You were pointing to M-61.

Mr. Moore: We will blame that on my eyes.

Q. You now find, do you not, that the M-51 control which is calibrated from 50 to 650 could be set to open at 200 and to close at 100?

A. Yes.

Q. I believe you stated that these controls on the market at the time the Cross patent was granted in 1930 had a wide range and were difficult to set to a narrow 182 range?

A. That is correct.

Q. Did you not?

A. Yes.

Q. But it was not impossible to set them to the narrow range; it was only difficult.

A. Well, we found it nearly impossible in our early installations.

Q. Nearly impossible, but not absolutely?

A. Well, we did not have experience with more than a comparatively few controls.

Q. How about the setting on the M-51? That was set ordinarily at what, in your furnace?

A. That might vary.

Q. Well, in this installation it was set on the—

Mr. Freeman: You already have that in the record, I think.

Mr. Moore: I want to make sure.

Mr. Freeman: You read it out of the former record.

Mr. Moore: Yes.

The Witness: A. The M-51 in this?

Mr. Moore: Q. In this installation.

A. In this installation was range 50 to 650 degrees and " was set at about 200 degrees low and about 238 degrees 183 high.

Mr. Freeman: By "this installation" you are referring to the one in Missouri?

The Witness: That is the stipulation.

Mr. Moore: The one in the Smith home.

The Witness: Yes.

Mr. Moore: Q. And that had a range then of 38 degrees, did it not?

A. Yes, approximately.

Q. I believe you stated yesterday that the Cross Coal-O-Matic Company was really owned by the estate of Walter M. Cross, Sr. You were secretary and treasurer of the Cross Coal-O-Matic Company during its existence, were you not?

A. I was secretary of the company, yes.

Q. Can you state whether or not Walter M. Cross, Sr. owned any stock in the Cross Coal-O-Matic Company?

A. Yes, he did.

Q. You have already stated that Forbes Cross was vice president.

A. Yes.

Q. Can you state whether or not Forbes Cross owned any stock in the Cross Coal-O-Matic Company?

A. Yes, he did.

184 Q. And of course you did too?

A. Yes, I did.

Q. Can you state who were the board of directors in the Cross Company?

A. As I remember it, the three of us were the board of directors, with possibly the addition of one or two others; I cannot say for sure.

Q. But you three were the majority on the board?

A. I am sure so.

Q. I believe you stated yesterday that the Butler Man-

ufacturing Company's interest in the Cross patent ceased in 1933. What was this Butler Company; was it a manufacturer?

A. Yes.

Q. What did they manufacture?

A. Principally steel products.

Q. They did not manufacture furnaces, did they?

A. I think they did have some furnaces in their line.

Q. Were you acquainted with the officers of the Butler Manufacturing Company?

A. Most of them.

Q. What?

A. With most of them.

Q. Can you state as secretary of the Cross Coal-O-
185 Matic Company whether or not any of the officers or directors of the Butler Company owned any stock in the Cross Coal-O-Matic Company?

A. No, they did not.

Q. They did not? You are positive?

A. I am quite sure. It is a long time, but I am quite sure.

Q. You said that outside of the family there were one or two other stockholders, but you could not recall right now.

A. That referred to directors.

Mr. Freeman: You asked him about directors.

Mr. Moore: Q. And do directors in Kansas have to be stockholders as well?

A. I do not know that.

Q. You are secretary of the company. You ought to know.

A. Perhaps I should, but I am not acquainted with it.

Q. And you say that none of the officers or directors, to your knowledge, of the Butler Company owned any stock in the Cross Coal-O-Matic Company?

A. No, I am quite sure they did not.

Q. Did you ever own any stock in the Butler Company?

A. No, I never did.

Q. Do you know whether or not your father or your
186 brother ever did?

A. I think my father did. My brother did not, to my knowledge.

Q. I believe you explained yesterday the relationship of the Cross Coal-O-Matic Company to the Minneapolis-Honeywell Regulator Company, and you stated that there

was not any interlocking control between these two companies, did you not?

A. Yes, I did.

Q. Are you acquainted with Harold W. Sweatt of Minneapolis-Honeywell Regulator Company?

A. Yes, I am.

Q. What position did he hold with that company?

A. I believe he is vice president of the company.

Q. He was vice president when the first license was granted in 1931, I believe. Do you know whether he has been advanced to president or not?

A. I am not sure.

Q. You are not sure. Are you acquainted with Charles B. Sweatt of the Minneapolis-Honeywell Regulator Company?

A. Yes.

Q. Do you know what position he holds?

A. Well, he may be vice president or president. I have the two confused and I am not sure.

187 Q. Mr. Charles B. Sweatt signed the second license agreement, Plaintiff's Exhibit 7, and Forbes Cross signed for the Mid-Continent Company. Now, is there anything there stating the office of Charles B. Sweatt?

Mr. Bair: I do not like to interfere with counsel's examination, but that appears from the document.

Mr. Moore: I could not find any office on the document; that is the only trouble.

Mr. Bair: But you are asking him whether it does or does not appear. Whether it does or does not appear on the document.

The Court: I should think this document speaks for itself. It is in evidence.

Mr. Moore: Q. Then Charles B. Sweatt signed as an officer for the Minneapolis-Honeywell Regulator Company?

A. It does not indicate his office.

Q. But he signed his name for the company, did he not?

A. Yes, he did.

Q. Are you acquainted with Mr. Willard F. Huff of the Minneapolis-Honeywell Regulator Company?

Mr. Freeman: "F," did you say?

Mr. Moore: Q. Mr. Willard L. Huff.

A. Well, I am not sure. I have corresponded with a

good many of them, but if I have talked to him it has
188 just been on one occasion.

Q. I believe you also stated that you are secretary and treasurer of the Mid-Continent Investment Company.

A. That is correct.

Q. As secretary and treasurer do you know whether Mr. Charles B. Sweatt owns any of the stock in the Mid-Continent Investment Company?

A. No, he does not.

Q. Mr. Harold W. Sweatt?

A. No, he does not.

Q. And Mr. Willard L. Huff?

A. No, he does not.

Q. Do you own any stock in the Minneapolis-Honeywell Regulator Company?

A. No, I do not.

Q. Do you know whether or not your brother does?

A. No, I do not know that he does, but I am quite sure he does not.

Q. I believe you stated yesterday that you discussed with the manufacturer's representatives when you were with the Cross Coal-O-Matic Company the difficulty you were having in securing a limit control for the purpose of preventing the fire from going out. Now at that time when
189 you had that problem before you did you ever write any letters to The Mercoid Corporation submitting that problem to them?

A. I cannot remember that I did.

Q. Well, to refresh your recollection I call your attention to a letter from the Cross Coal-O-Matic Company dated August 20, 1930, addressed to The Mercoid Corporation, and signed by Walter M. Cross, Jr.

Your Honor, this is one of the many letters that have been presented under Rule 36, and I asked the plaintiff to admit or deny their genuineness and whether or not the signatures were the signatures of the individuals and the officers of the company, and the plaintiff neither admitted or denied, and in accordance with the rule that must be taken then that they admit them.

Mr. Stone: What is the number of that one?

Mr. Moore: That is the letter dated August 20, 1930. They have not been introduced in evidence and they will be by the defendant in due course.

Mr. Freeman: Mr. Moore, when you speak of the

plaintiff, will you speak of the plaintiff as Mid-Continent or M. H.?

Mr. Moore: Yes, Mr. Freeman. I have so far referred to Mid-Continent only. I have not as yet referred to any act or deed of the unwilling plaintiff, Minneapolis-190 Honeywell Regulator Company.

Mr. Moore: Have you got that, Mr. Stone?

Mr. Stone: We admit it.

Mr. Moore: Q. Will you please read that letter to the court?

A.

"Kansas City, Missouri,
August 20, 1930.

The Mercoid Corporation,
Chicago, Illinois.

Gentlemen:

"We find, with the use of small domestic stokers in hot air furnaces, a limit control both for top stack temperature limits ranging from say 200-250 degrees, as well as low temperature limit control for fireboxes of say in the neighborhood of 150 degrees are required. Will you please recommend and quote prices and discounts on the controls that we should use for these purposes? We will thank you for your early attention to this letter.

"Also we would appreciate duplicate copies of the various description and service sheets for your various controls about which we asked in our recent letter. Are
191 these available in quantities so that we might incorporate them into our service manuals for agents?

"Very sincerely,
Cross Coal-O-Matic Company,
By Walter M. Cross, Jr."

Q. Do you remember having received any correspondence in reply to that letter?

A. No, I cannot remember it.

Q. Then I ask you to refresh your memory by looking at the letter dated September 2nd, which was also one of these letters presented by the defendant to the plaintiff Mid-Continent, and it is addressed to The Mercoid Corporation and signed by Walter M. Cross, Jr. Will you please read that letter to the court?

A.

"September 2, 1930.

"The Mercoid Corporation,
4201 Belmont Avenue,
Chicago, Illinois.

Attention Mr. B. F. Webb, Jr.

Dear Sir:

"We wish to thank you for your letter of August 28th enclosing recommendation for M-53 and the M-51 temperature control.

192 "Very sincerely,
Cross Coal-O-Matic Company,
Walter M. Cross, Jr."

Mr. Freeman: Are you going to introduce those letters now so they can have an exhibit number and it will be easier to follow the record from here on?

Mr. Moore: Everybody except the court has already seen this copy, and I will present the court with a copy of all of the letters and papers that have been asked of either the Mid-Continent or the Minneapolis-Honeywell as to whether or not they were genuine. The Minneapolis-Honeywell have admitted that the letters in here from them to The Mercoid Corporation of various dates are genuine. The letters submitted by and from the Cross Coal-O-Matic Company must be taken as genuine, because they neither admitted nor denied them.

Mr. Stone: We admit that, Mr. Moore, but we would like on redirect maybe to refer to these two letters, and I think we should have exhibit numbers on them.

Mr. Moore: You can identify them. I would like to introduce any exhibit of mine in the regular course of my defense as they are brought up in the proper place.

The Court: All right, proceed. Ask another question.

Mr. Moore: Q. Yesterday I asked you wherein 193 you found defined in the claims of the Cross patent a combustion stoker switch and I stated that I would repeat that question today after you had inspected the Cross patent. Now, have you done so and are you ready to answer this question now?

A. Yes.

Q. I hand you a copy of the Cross patent in suit, Plaintiff's Exhibit 8, and repeat the question.

A. I did not understand that.

Mr. Moore: Will you please read the question?

(The question was read by the Reporter as above recorded.)

A. The separate thermostatic control actuated by a predetermined minimum temperature in said combustion space is typical of the part of the claim relating to that particular instrument.

Mr. Moore: Q. Does that define any particular form or type of switch?

A. No, it does not.

Q. It does not?

A. No.

Q. Then any type of switch that was sold on the market at the time that would answer this description would be considered as a part or an element of the claims, is
194 that correct?

A. Yes.

Mr. Moore: Cross-examination closed.

The Court: Is there any redirect?

*Redirect Examination by Mr. Freeman.*

Q. Mr. Cross, in the suit that was filed in Kansas City did Minneapolis Honeywell have anything to do with directing or conducting that suit?

A. No, it did not.

Q. And did they pay for any of the expense of that suit?

A. No, they did not.

Mr. Freeman: That is all.

The Court: The next witness. Have you some more questions you want to put to Mr. Cross?

Mr. Stone: I would like to put a few redirect questions, your Honor.

*Redirect Examination by Mr. Stone.*

Q. In the course of the cross-examination, Mr. Cross, counsel for the defendant had tried to bring out the fact that prior to the bringing out of the M-61, the switch
195 by the Mercoid Corporation, the defendant was manufacturing other switches that could be used in the stack of a furnace. Have we ever denied that?

A. Not to my knowledge.

Q. When these other switches were offered to you—I mean switches such as those bearing the number M-51, or as mentioned in that letter which you read, the M-53,—did you object to The Mercoid Corporation selling those to you or others on the market?

A. No.

Q. Well, what was it in Mercoid's conduct which caused the Mid-Continent people to feel that they were infringing?

A. Well, they issued literature and instructions as to how to use, let us say, any switch in what we considered an infringement of this combination system which accomplished a new result and on which we felt our patent was good.

Q. Was that literature issued in connection with the introduction of a new switch by the defendant?

A. Yes, I believe it was.

Q. What was the number of that switch?

A. As I recall it, it was the M-61 control.

Q. Do you recall when the M-61 control and this 196 literature first came out?

A. I would say in the neighborhood of 1933.

Q. So that it was the introduction of a new switch having a new serial number in conjunction with literature, such as Plaintiff's Exhibit 12,—which I showed to your Honor yesterday—which was considered by you to be the offending conduct of the defendant corporation?

A. Yes, that is it.

197 Mr. Stone: Your Honor, at this time I wish to read into the record Interrogatory No. 11, and its reply,—interrogatory by me and the reply by the defendant—because I think it will help clarify your Honor's thoughts on this particular point.

This was the interrogatory:

"How does the M-61 control differ from stack controls theretofore offered?"

That is the question:

"How does the M-61 control differ from stack controls theretofore offered?"

The reply covers approximately one and one-half pages and has six sub-paragraphs. I am only go to read three or four of them.

This is the first;

"In one respect as outlined in answer to Question No. 10, a short stem."

They shortened the stem on this M-61 control over the controls they had been using before.

"2: In the number of switch circuits to be controlled.

"3: In the manner in which the circuit was closed on a drop in stack temperature rather than a rise in stack temperature.

"4: With the introduction of a protective well in 1933, for the temperature element—"

Referring to Plaintiff's Exhibit 43, your Honor, 198 the temperature element is this coil on the end of the control and sticks into the stack.

Mr. Moore: That is not an M-61, however.

Mr. Stone: I beg your pardon. M-11.

(Continuing.) "—for the temperature element the M-61 just differed in this respect with those which of the same type and other types did not employ the well."

Q. Mr. Cross, on direct examination and again on cross-examination you stated that the wide temperature range controls on the market prior to the introduction of the M-61 were not satisfactory in handling the particular problem that a Holdfire switch must handle, is that correct?

A. That is correct.

Q. While they could be used to handle the problem after a fashion, they were not specifically designed for that problem, is that correct?

A. Yes.

Q. Did the M-61 handle that problem fairly well?

A. Yes, it did.

Q. And according to the answer to the interrogatory, the M-61, as a matter of fact, is different than the M-51?

A. Yes.

Q. Or any of the other controls theretofore manu- 199 factured by the defendant corporation?

A. Yes.

Q. On cross-examination, Mr. Cross, you were asked certain questions in regards to the license agreements between the plaintiff Mid-Continent and Minneapolis-Honeywell, and those questions used the word "stoker-switch." Is that word "stoker switch" used in the original license agreement?

A. Yes, I think it was.

Q. The phrase is—

A. "Combustion stoker-switch."

Q. When did the phrase "combustion stoker switch" first come into use?

A. About the time we made the agreement.

Q. Prior to the development of the Cross furnace installation system, was the term "combustion stoker switch" an identifying term for a control, so far as you know?

A. No, it was not.

Q. It did not exist?

A. No.

Q. You testified, Mr. Cross, that there was a competing system, where the Holdfire switch was controlled by a timer. In that system is the term "combustion stoker switch" used?

200 A. No, I believe not.

Q. In the life of the Mid-Continent Investment Company have you ever received returns from a Cross patent based upon anything but the royalties recited in the two license agreements, Plaintiffs' Exhibits 6 and 7?

A. No, not as to royalties, except in that agreement with Butler.

Q. With Butler?

A. That is right.

Q. And that was just an indirect arrangement, anyway, which occurred for a short period of time in 1931, 1932 and 1933?

A. When that arrangement existed we obtained royalties on the stoker as a whole from Butler.

Q. Is the room thermostat, referring to Plaintiffs' Exhibit 37, also a part of the Cross furnace installation system?

A. Yes.

Q. Has the plaintiff ever attempted to obtain a royalty based upon the sale of room thermostats?

A. It has not.

Q. Does the Minneapolis Honeywell sell such room thermostats?

A. Yes, they do.

201 Q. Why did not you attempt to obtain a royalty on the room thermostat, as well as upon the stack switch, using that as a basis for the amount of royalty?

A. We felt that the stack switch was an item added in a certain way to accomplish the operation of this invention and that the measure of the use of the invention

would be found by the amount of stack switch sales volume; Correct that. Correct "stack switch" to "stoker switch" sales volume.

Q. Was the stoker switch the heart of the Cross invention?

A. Yes, it was.

Q. Would you say that the inventor of this Cross system or the owner of the patent would be enfitled to a royalty based upon the selling price of the furnace, the stoker, and all of the other controls?

A. No, not in ordinary practice, it would not be.

Q. And why do you feel that way about it?

A. We found that royalty was usually a reasonable amount of money, or else the situation was not very good and did not last long in any event; so we applied the royalty to the specific item and tried to make it reasonable as to the specific item.

Q. And that specific item, which was the stoker 262 switch, was really the heart of this invention?

A. That is true.

Q. And that is what the Cross patent really added to the prior art?

A. That switch and its connections into the system with the thermostat and stoker.

Q. And you were trying to use that switch as a reasonable method of determining the number of complete installations put in?

A. That is right.

Q. And one switch sold specifically for this job would mean one complete installation some place in the field, would it not?

A. That is true.

Q. So that when you received royalty on a stoker switch, you thus received royalty on one complete installation?

A. That is right.

Q. And you never attempted to extend the extent of your royalty or the extent of your return to other things that Minneapolis-Honeywell sold and used in such installations, such as the room thermostat?

A. No.

Q. On cross-examination counsel for the defendant read to the court a portion of paragraph 2 of the 1931

203 license agreement between the plaintiff and M. H., but omitted these words at the end:

"to prevent the extinguishment of its fire when operating under low heat requirement conditions."

Now, Mr. Cross, under that paragraph, did you intend to obtain a royalty on a combustion stoker switch, which, as a matter of fact, was not used in an installation such as the Cross installation?

A. No, we did not.

Q. That is for a switch which was designed specifically for that purpose, but to your knowledge or the knowledge of Minneapolis-Honeywell not to be used in an infringing installation, if they were going to adapt it for something, you did not expect the royalty on it?

A. No, we did not.

Mr. Stone: That is all, your Honor.

Mr. Moore: I would like to ask a few questions on re cross.

*Recross Examination by Mr. Moore.*

Q. Did you have any means of checking up upon what happened to these combustion stoker switches, so you could determine whether or not they were actually used in a heating system?

204 A. We had merely the privilege of auditing and investigation of Minneapolis' records.

Q. Merely examining the records?

A. Yes.

Q. Would that show definitely that when they sold a stoker switch it was to be put in a heating system?

A. Ordinarily.

Q. Ordinarily, but you are not positive?

A. Well, sometimes there were requests on their part to sell a control, termed a stoker switch, for some other purpose.

Q. Then they did use stoker switches for some other purposes, did they?

A. I presume so, but I am not sure of it.

Q. I believe you stated somewhere that the M-61 was first put on the market in 1933, did you not?

A. That was when the—

Q. Is that the first time you heard of it?

A. That is as I remember it, yes.

Q. What?

A. That is as I remember it.

Q. Now, I believe the defendant has furnished Mid Continent with literature, and as Mr. Stone referred to the interrogatories and replies in the pleadings, in the 206 questions asked by Mid Continent of Mercoid, Question 10 reads:

"When was the M-61 control introduced?"

And the answer to No. 10 indicates that it was introduced on or about June, 1931. Does that refresh your recollection any?

A. As to when it was introduced?

Q. Yes.

A. Well, it might well have been.

Q. You did not see it until 1933?

A. I won't say that at all, no. I just recall about 1933 as the time I saw it, but it could have been earlier, of course.

Q. In these letters there is a letter here dated November 21, 1932, addressed to The Mercoid Corporation and signed by Mr. Forbes Cross, and it states:

"We have obtained a copy of your circular showing automatic controls for stokers and forced draft feed equipment. On page 7 of this bulletin appears your type M 16 stoker control, the sale and use of which infringes the two above patents."

Now, apparently that was a misprint, because it should have been M-61 and the bulletin Page 7 was the bulletin issued by The Mercoid A-14, dated January, 1931, and that will be introduced at the proper time.

206 Mr. Freeman: Are you asking him a question or is that an argument, Mr. Moore?

Mr. Moore: I just read that, that is all. He said he didn't know anything about it until 1933.

Here is a letter written by the president of the companies in 1932.

Now, again referring to those interrogatories and answers, Mid Continent asked Mercoid:

"In view of the defendant's statements that they had been making special controls for years prior to the plaintiff's patent, why was it necessary to bring about the M-61 control?"

Mercoid's answer is:

"The M-61 came into being as the result of a demand for a shorter stem than that supplied with the M-51; the

M-51 has been modified as to length of sleeve, anywhere from two inches to forty inches or more and where the demands for a particular length are such as to make it advisable to stock such a control, identification letters and numerals were assigned to that length of that type to simplify the handling of orders, hence Type M-61."

Q. Now, I believe you have testified in the Mid-Continent *vs.* Smith in regard to the M-51 and the M-61, did you not?

A. Just in this record recently?

Q. In the Mid Continent *vs.* Smith.

A. I am not quite clear as to what testimony you
207 refer to.

Q. In the Mid-Continent *vs.* Smith suit there was before the court there and before the witnesses an M-51 Mercoid control and an M-61 Mercoid control, was there not?

A. Were those exhibits in that case?

Q. Those were exhibits in that case?

A. Yes.

Q. You did inspect the M-51 and the M-61 in the Smith residence, did you not, when we were down there together?

A. Yes.

Q. Could you tell any difference from that inspection between the two controls as to their construction or operation, except as to their setting?

A. It is difficult for me to remember at this distance, Mr. Moore. I seem to recall a difference in the mechanism for setting the differential, but I am not sure.

Q. Was there any differential as to the length of the stem? You could not tell that, could you?

A. No, I could not.

Q. Now, I understood you to say on your recent examination that the use of a room thermostat in a system of that kind would be considered as infringing the claims of the Cross system patent, is that correct?

A. I don't believe I made that statement. I do not
208 recall now making it.

Q. Would, in a heating system, the use of a room thermostat be considered an infringement of the Cross patent?

A. In that specific heating system?

Q. In a heating system with a Holdfire furnace control?

Mr. Bair: I object to that as being immaterial, calling

for an answer from this witness, who does not purport to be a patent expert, and calling for an answer concerning a situation that is not involved in this case.

The Court: I don't know about that. Mr. Stone went far and wide in his redirect examination. I will overrule the objection. There was not any limitation when he was examining.

Mr. Moore: Q. My question was whether you consider the use of a room thermostat in connection with the heating system employing a stoker switch an infringement of the Cross claims?

A. In so far as if contributed to the combination.

Q. Then the room thermostat would contribute to the combination, would it?

A. Yes.

Q. Then the manufacturer of the thermostat would also be subject to a suit for contributory infringement, would he not?

209 A. It is possible.

Q. I believe you stated that the stoker swtich was the heart of this Cross system patent, did you not?

A. Yes.

Q. Did Walter M. Cross invent the heart of this system?

A. He invented the system.

Q. But he did not invent the heart?

A. He invented no control, no.

Q. Then the stoker switch, as you have referred to it, was not the invention of Walter M. Cross?

A. That is true.

Q. That stoker switch, then, is not a part of the invention of the Cross system patent, is it?

A. I would not say that at all.

Q. Per se? The switch per se, then, is not a part of the Cross invention?

A. The thermostat, the stoker and the stoker switch, all three components are necessary to meet the requirements of the claims of the patents, as I understand it.

Q. You say that Mr. Cross did not invent the stoker switch?

A. That is true.

Q. And now you say that the Cross system patent covers the stoker switch, which was not invented by Mr. Cross?

210 Mr. Moore, the difference between an invention covering a piece of apparatus and a combination invention covering several uses of a piece of apparatus or several pieces of apparatus to accomplish a new function, I feel that this falls within the last category.

Q. Or system, you mean?

A. Yes.

Q. Then there is a difference between a system patent and an article patent?

A. That is as I understand it.

Q. And if the article is patented by itself, you still consider that it would infringe a system in which it was used?

A. The act of using the system, I feel, is an infringement, and what that entails, of course, takes a number of different forms.

Q. You mean that if somebody bought a stoker switch, not patented by Mr. Cross, and put it into this system and used it as a stoker switch, that would be an infringement of the system?

A. I would suspect that he was using the system if he did that, yes.

Q. How about a coal stoker manufacturer who supplies his coal stoker to this system patent; would he be 211 contributing to the infringement of that system patent?

A. He might very well, if he issued certain instructions.

Q. You stated that the manufacturer of a room thermostat would be contributing to the infringement, so then the manufacturer of a coal stoker would also be a contributory infringer?

A. I am afraid you are getting a little ahead of what I said in my statements, because my intention was to convey that the combination of the three units to maintain the fire control was the infringement of the system.

Q. What three units do you refer to?

A. The stoker switch, the thermostat and the stoker, as set out in the claims.

Q. They are the three elements?

A. Yes.

Q. So that the manufacturer of any of those elements who sold it to a user and put it in that heating system would be an infringer of that heating system?

A. He could contribute to it.

Q. So the manufacturer of the room thermostat would contribute to the infringement of the system patent and

the manufacturer of the coal stoker would also be contributing to the infringement of the system patent, is
212 that correct

A. I am not a patent expert or lawyer, so I am not sure that I could answer that.

Q. But that would be a general understanding of the way you expressed yourself here today. I think you could answer that question.

A. (No response.)

Mr. Moore: Recross examination closed.

Mr. Stone: I will not ask any further questions.

The Court: Any further questions of this witness? All right, Mr. Cross, you are excused.

(Witness excused.)

Mr. Stone: Mr. Cook, will you take the stand.

213 JUNIUS F. COOK, JR., called as a witness on behalf of plaintiff Mid-Continent Investment Company, having been first duly sworn, testified as follows:

*Direct Examination by Mr. Stone.*

Q. Will you state your name?

A. I am Junius F. Cook, Jr.

Q. Where do you reside, Mr. Cook?

A. Hinsdale, Illinois, 305 North Washington Street.

Q. What is your occupation?

A. I am an attorney and also an electrical engineer. I specialize in patents.

Q. Will you outline briefly your formal education in the engineering field?

A. After the preliminary common education, I matriculated at Cornell University, and there pursued the four year course of studies leading to the degree of electrical engineer, which I received in 1922.

Thereafter, I obtained employment with General Electric Company in its testing department and remained for approximately two and a half years engaged in the testing of various types of electrical equipment, includ-
214 ing motors, generators, transformers, regulators, electrical control systems. In fact, the arrangement of that testing course is such the test engineers are moved around from division to division in order to become acquainted with all kinds of electrical equipment.

After that I returned to law school, and then came to Chicago to engage in patent law. I received the degree of LL.B from Chicago Kent College of Law in 1927.

For the past fourteen years I have been engaged in patent law work. I estimate about half of my time has been spent on electrical matters.

Q. When you came to Chicago what law firm were you associated with?

A. I was employed by John C. Carpenter, who is now deceased.

Q. Subsequent to your association with Mr. Carpenter, with whom were you associated?

A. Mr. Howard M. Cox.

Q. What is the name of that law firm, or was the name at that time?

A. That firm at that time was called Cheever & Cox.

Q. At the present time, with what law firm are you associated?

A. The firm of Spencer, Marzall, Johnston & Cook.

215 Q. You are the Cook of that law firm?

A. I am.

Q. And I am associated with that law firm?

A. Yes.

Q. Mr. Cook, have you had previous experience in experting in patent cases in this district?

A. I have, and in other districts.

Q. Mr. Cook, I show you Plaintiffs' Exhibit 8, and I ask you whether or not you have made a study of the patent in suit?

A. Yes, I have studied this Cross patent No. 1,758,146.

The Court: I wonder if we could suspend at this time?

Mr. Stone: Surely.

The Court: Some more of the traction lawyers are coming in. We will take this up at two o'clock.

Whereupon a recess was taken to two o'clock P. M.

216 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company,
*vs.*
The Mercoid Corporation.
Before Igoe, J

Tuesday, September 9, 1941.
2:00 o'clock p. m.

Met pursuant to recess.

Present:

Messrs. Stone, Bair, Freeman, Moore.

JUNIUS F. COOK, JR., a witness on behalf of plaintiff, having been previously duly sworn, resumed the stand and testified further as follows:

*Direct Examination (resumed) by Mr. Stone.*

Q. Mr. Cook, I ask you to read claim 1 of the Cross patent in suit.

217 A. Claim 1 of Cross patent 1,758,146 reads as follows:

"A heating system comprising a combustion pot, means for feeding fuel thereto, a combustion space above the combustion pot, means controlled by the temperature of the rooms to be heated for automatically regulating the fuel feeding means, and a separate thermostatic control actuated by predetermined minimum temperatures in said combustion space for preventing extinguishment of the fire when operating under low heat requirement conditions."

Q. For the purposes of indicating the scope of the plaintiff's patent, will you now take the pointer and following that claim point out the various elements of the claim on Plaintiff's Exhibit 37, which is the infringing installation of Smith in Carthage, Missouri?

A. This Exhibit 37 shows a heating system which consists of a combustion pot in the furnace with stoker means driven by the motor 29.

Q. Mr. Cook, I wonder if you could stand on the other side so you could talk a little more to the court.

A. For feeding fuel into the combustion pot. The

furnace has a combustion space above the combustion pot. There is means controlled by the temperature of the rooms to be heated for automatically regulating the fuel feeding means. This means is the room thermostat 22 which operates through the electrical wires to control the
218 operation of the stoker motor, and there is a separate thermostatic control which is the M-61 actuated by predetermined minimum temperatures in the combustion space which is connected with the flue, for preventing extinguishment of the fire when operating under low heat requirement conditions.

The thermostatic switch means M-61 operates through the electrical circuits to cause the stoker motor to drive the stoker and thus replenish the fuel bed when the temperature in the combustion pot, and, therefore, the temperature in the stack reaches and low temperature at which the fire is in danger of going out. That occurs during periods of low heat requirement conditions; that is to say, conditions in the room being heated when the thermostat 22, the room thermostat, does not require heat and hence does not drive the stoker motor.

Q. Referring to claim 1, lines 7 and 8, does the claim call for a predetermined minimum temperature or predetermined minimum temperatures?

A. The claim uses the plural. It says "separate thermostatic control actuated by predetermined minimum temperatures."

Q. Now, Mr. Cook, I refer you to claim No. 5 and 219 ask you to read it through.

A. Claim No. 5 of the Cross patent 1,758,146, reads:

"A force draft furnace for a heating system having a power driven underfeed stoking element, a dual theremostatic control mechanism connected to the stoker driving means, one thermostat mechanism functioning by variations of the temperature in the space to be heated, and the other by predetermined minimum temperature within the furnace to prevent extinguishment of the fire."

Q. Will you now point out on Plaintiff's Exhibit 37 that dual thermostatic control?

A. The dual thermostatic control referred to in this claim is the combination control affected by the room thermostat and the stack thermostat M-61, the room thermostat being identified by the numeral 22.

Q. In this dual thermostatic control what is the re-

lationship of the two controls with respect to each other and with respect to the circuit operating the stoker?

A. The two thermostats, that is, the room thermostat 22 and the stack thermostat 61, are electrically connected together in parallel at the common points which I indicate and are, therefore, both connected in the electrical system for the control of the stoker motor. This connec-
220 tion is such that either one of the thermostats will operate the motor. The room thermostat will operate the motor when room temperature has fallen to, say, 68 degrees Fahrenheit, to cause the motor to operate and replenish the fire in order to raise the temperature of the room. M-61 will operate through the same electrical system to cause the stoker motor 29 to replenish fuel when the temperature in the furnace has fallen to a degree such as 125 degrees Fahrenheit, indicating that the fire is about to go out.

Q. Mr. Cook, at what points on Plaintiff's Exhibit 37 is the parallel connection between the two controls established?

A. It is at the junction points, one between the conductor 23-A and 23-D, and the other between the conductor 23-B and 23-C.

Q. I now show you finding of fact 11 made by the Honorable Judge Reeves in the Missouri court suit and ask you to read it. That is in Plaintiff's Exhibit 3, your Honor. I think it is the third one.

The Court: It is your bill of complaint?

Mr. Stone: Yes, I think it is Exhibit 3, findings of fact.

A. This finding of fact reads:

221 "A domestic coal stoker heating system which is automatically controlled by a dual thermostatic system of control, one phase of the system operating a fuel feed and the forced draft mechanism by variations in the room temperature of the dwelling, the other control functioning the fuel feed and forced draft by predetermined minimum temperature in the furnace, is a new novel useful and patentable combination. Claims 1, 2, 3, 4 and 5 of plaintiff's invention No. 1,758,146 are patentable and valid and are infringed by the defendant."

Q. Does your answer as to what constituted a dual thermostatic control system in Plaintiff's Exhibit 8, claim 5, apply also in the case of this dual thermostatic system of control used by Judge Reeves in his finding of fact 11?

A. Yes, sir; I think that Judge Reeves, by dual system

of control, meant the use of a stack switch in combination with a room thermostat in an electrical system for controlling the stoker.

Q. Referring now to Plaintiff's Exhibit 27, page 20, which contains the assignment of errors in the appeal from the District Court to the Court of Appeals of the Eighth Circuit, I ask you to read exceptions 16, 17 and 19.

I have no copies of these, your Honor.

A. Exception No. 16 reads:

222 "The court erred in finding that the patent is entitled to have a fair range of equivalents in view of the history of the application for the patent in the Patent Office."

Exception 17 reads:

"The court erred in finding all of the teaching of the patent justifies the statement that the auxiliary control is not required that it be put in any particular part of the furnace."

Exception 19 reads:

"The court erred in finding that the prior uses of thermostats did not anticipate nor limit the claims of the patent."

Q. Mr. Cook, I hand you plaintiff's exhibit 12 and ask you to state what it is, whether you have read it and what its general purport is.

A. I have read this Exhibit 12, which is bulletin No. 240 of the Mercoid Corporation. The bulletin describes and shows the Mercoid stoker control type M-61 and gives instructions for the installation of the type M-61 control. The bulletin furnishes wiring diagrams illustrating the manner in which the control is to be installed on a furnace and connected together with the other control equipment.

Q. Did you state, Mr. Cook, what control was particularly mentioned in that bulletin?

223 A. The type M-61, the control of The Mercoid Corporation.

Q. Mr. Cook, I refer you to Plaintiff's Exhibit 38 and ask you to compare it with the top figure on page 2 of Plaintiff's Exhibit 12.

A. Plaintiff's Exhibit 38 is an enlarged reproduction of that portion of diagram No. 1 which is in dotted lines, with the exception that the central portion of the boiler shown in Exhibit 38 has been omitted, as indicated by the horizontal dotted lines, for the purpose of reducing the overall height of Exhibit 38. Otherwise it is a scale enlarge-

ment of the dotted lines shown in diagram No. 1 of Exhibit 12.

Q. Will you now look at Plaintiff's Exhibit 40, which is on a transparent carrier, and compare Plaintiff's Exhibit 40 with the top figure on the second page of Plaintiff's Exhibit 12?

A. Plaintiff's Exhibit 40 is an enlarged replica of the solid line portions of diagram No. 1 in Plaintiff's Exhibit 12, the Mercoid bulletin.

Q. I now superimpose Plaintiff's Exhibit 40 on Plaintiff's Exhibit 38 and ask you to compare the composite result with the showing shown in Plaintiff's Exhibit 12, the upper figure on page 2.

224 A. The composite result is an enlarged replica of the drawing diagram No. 1.

Q. Will you step up to this exhibit, Plaintiff's Exhibit 40, superimposed on Plaintiff's Exhibit 38, and point out the essential features in the controls, wiring, and what not, of the installation there shown?

A. This composite exhibit 38 and 40 shows a furnace which includes a boiler; a fire pot is in the furnace, and stoker mechanism for feeding fuel into the fire pot. It has a flue. The parallel horizontal dotted lines represent a floor. There is control equipment for the stoker motor, which consists of the electrical wiring, a room thermostat above the floor in the space to be heated, a stack switch which is connected together in parallel relationship with the room thermostat for the purpose of dual control of the stoker motor. There is also a limit switch which is responsive to the temperature of the boiler for the purpose of disabling the entire system in the event that the boiler temperature rises to dangerously high limits.

Q. Is Plaintiff's Exhibit 40 all in one color?

A. No, the room thermostat and the stack thermostat and the parallel connection there between is shown in red, for the purpose of differentiating that part of the sys-

225 tem from the remainder of the electrical system.

Q. Mr. Cook, referring to Plaintiff's Exhibit 8, which is the patent in suit, will you read claim 1 on the composite showing of Plaintiff's Exhibit 40 superimposed on Plaintiff's Exhibit 38?

A. We have here a heating system comprising a combustion pot in the furnace, the stoker means for feeding fuel into the combustion pot, and there is a combustion

space above the combustion pot in the furnace. There is a room thermostat which is a means controlled by the temperature of the rooms to be heated, and this thermostat operates to automatically regulate the fuel heating means, which is the stoker, and there is a separate thermostatic control actuated by predetermined minimum temperatures in the combustion space. That means is the stack switch, and it operates in response to predetermined minimum temperatures in the combustion space for preventing extinguishment of the fire when operating under low heat requirement conditions; that is to say, when the room thermostat for extended periods does not demand heat.

Q. Claim 5 of the patent in suit calls for a dual thermostatic control. Will you point that out?

A. The system in Plaintiff's Exhibits 38 and 40
226 has the dual thermostatic control which is shown in red, consisting of the stack switch M-61 and the room thermostat which are so connected that either one of them will start the stoker motor either when the temperature in the room to be heated requires operation of the stoker or when the temperature of the furnace requires operation of the stoker to maintain the fire.

Mr. Stone: At this time, your Honor, I offer in evidence PLAINTIFF'S EXHIBITS 38 and 40.

(The exhibits were so marked.)

Mr. Stone: Q. Now, Mr. Cook, I take Plaintiff's Exhibit 40 and I take it over and I superimpose it on Plaintiff's Exhibit 37 and I ask you to comment upon the relationship of the various elements shown in Plaintiff's Exhibit 40 to the elements shown in the infringing installation in the Smith suit as presented in Plaintiff's Exhibit 37 which is underneath Plaintiff's Exhibit 40.

A. The M-61 stack switch of Exhibit 40 is disposed in operating relationship with the flue of the furnace in Exhibit 37 in the same relationship as the M-61 stack switch of Exhibit 37. The limit control switch is in the same relationship responsive to temperature in the furnace, the bonnet of the furnace, as is the corresponding M-51 safety switch of Exhibit 37. The room thermostat is in posi-
227 tion in the room to be heated as is the room thermostat 22 of Exhibit 37, and the stoker motor of Exhibit 40 is in operative relationship to the stoking mechanism, as is the stoker motor 29 of Exhibit 37.

Q. Is the system shown in Plaintiff's Exhibit 40 identical with the system shown in Plaintiff's Exhibit 37?

A. It is substantially identical, except that in the Exhibit 37 the control, the thermostatic control of the motor, is accomplished indirectly through a relay which is identified as a V2-3A relay. Otherwise the relationship of the control thermostats and with the stoker motor is identical in both.

Q. Will you point out visually the comparison between the parallel relationship of the stack and room thermostats to each other in Plaintiff's Exhibit 40 as compared with the parallel relationship of the stack and room temperatures in Plaintiff's Exhibit 37?

A. In Exhibit 40 the conductors which connect the stack switch M-61 are connected with the conductors from the room thermostat at the places where the red lines join in the Exhibit 40. That is the same corresponding place where the conductors 23-B and 23-A in Exhibit 37, the conductors being from the room thermostat, join up in parallel with the conductors 23-C and 23-D in Exhibit 228 37, which lead to the stack thermostat M-61.

Q. Is the dual thermostating control system shown in Plaintiff's Exhibit 40 identical with the dual thermostatic control system shown in Plaintiff's Exhibit 37?

A. It is, with the exception of that relay that was added into Exhibit 37.

Q. What is a relay, Mr. Cook?

A. A relay is a device for transmitting the control impulse from the thermostats down to the stoker motor.

Q. Why should one stick in a device to do that? Why not hook them up directly, as shown in this exhibit here?

A. It can be done directly. The use of the relay is a matter of preference. It is used actually to make it unnecessary to carry the high voltage of the line up to the room thermostat where the high voltage might shock people.

Q. Moreover, will a room thermostat carrying a line voltage require a larger switch than one carrying a much smaller voltage, such as that that can be obtained by whatever relay you choose to use?

A. It probably would, but not necessarily so.

Q. The presence or absence of the V2-3A relay has nothing to do with the existence of the various elements called for by the claims?

A. No. It is immaterial whether you use a relay 229 or not, as far as the claims are concerned.

Q. With respect to the stoker on the one hand and the M-61 and the room thermostat on the other hand, where would you describe the V2 3A relay in Plaintiff's Exhibit 37 as being positioned?

A. It is between the thermostats, the control thermostats and the stoker motor.

Q. And the fact that it is between the room thermostat and the stack thermostat on the one hand and the stoker motor on the other did not affect Judge Reeves' decision in finding infringement?

A. Not at all.

Q. Referring to Plaintiff's Exhibit 37, Mr. Cook, I call your attention to this M-51 and ask you: How is it connected to the system shown in Plaintiff's Exhibit No. 37?

A. The M-51 is connected electrically in series and its sole function is to disable the system when the temperature in the furnace, in this case in the bonnet of the furnace, rises to a high temperature.

Q. So far as the claims in the patent are concerned, does the presence or the absence of the M-51 in a furnace installation affect the question of infringement?

A. None whatever. It can be used or it can be 230 left out as you choose. If you do not want the protective function of the M-51, you can leave it out.

Q. As a matter of fact, in Plaintiff's Exhibit 40, something in the way of an equivalent of an M-51 is shown, is it not?

A. Quite correct.

Q. You are pointing to that circular control which is directly beneath the red lines leading from the thermostat?

A. Right. That high temperature limit control is also in series in this circuit and has the same function, namely, to disable the circuit in the event of high temperature, as does the M-51 in Exhibit 37.

Q. Mr. Cook, I ask you to again refer to Plaintiff's Exhibit 12 and to tell me what reasonable inference an electrical engineer or an electrical installation man would draw from that folder as a whole, directing your attention particularly to the M-61 control.

A. The inescapable inference is that the M-61 thermostat is to be positioned in the flue as a holdfire switch and it is to be connected in parallel with the room thermostat for the purpose of accomplishing a dual control of the stoker motor.

Q. Does the circular show a system such as is de-
231 scribed in all five claims of the Cross patent?

A. It does.

Q. Does it show any other kind of a system?

A. No. It shows a modified system, in diagram No. 2.

Q. Let us go into that, Mr. Cook.

A. Do your want me to tell what that system is?

Q. I would rather have you direct your attention to the controls mounted in the stack.

That is the lower one, your Honor, and you will see two controls in the chimney there.

A. The difference between the system shown in diagram No. 1 and the system shown in diagram No. 2 in Plaintiff's Exhibit 12 is simply that an additional stack switch is added. There are two stack switches shown in diagram No. 2 and of these two the left hand one is the duplicate of the single stack switch, the M-61 switch, shown in diagram No. 1. The right hand stack switch in diagram No. 2 has been added and it is electrically connected in series with the stoker motor and in advance of the room thermostat and the M-61 thermostat, which are connected in parallel in diagram No. 2 as they are in diagram No. 1.

Q. In Plaintiff's Exhibit 42 the holdfire switch bears what part number?

232 A. The holdfire switch is M-61.

Q. What is the common name for the other switch shown in that stack?

A. The second stack switch in diagram No. 2 is what they term an out fire switch.

Q. And what part number does that switch bear?

A. M-63.

Q. Mr. Cook, did you hear the testimony this morning which tended to bring out the fact that you could use an M-51 switch in the flue for the purpose of operating as a hold fire switch or as an out fire switch?

A. I did.

Q. Does that circular show that the defendant was advising the trade to use an M-51 control as either an out fire switch or as a hold fire switch?

A. No; this circular makes no mention of the M-51. It simply recommends type M-61 for the hold fire switch and type M-63 for an out fire switch.

Q. Now, Mr. Cook, did you hear the testimony of Mr. Cross, either yesterday or this morning, in which he said

that the controls that were on the market in 1930 or early 1931 which had this long range from 100 to 600 degrees were not satisfactory because they did not handle the particular low range of 200 to 100 degrees well?

233 A. Yes, I heard it.

Q. Now, Mr. Cook, does that folder show The Mercoid Corporation recommending what type number switch for the low range of 200 to 100 degrees and another type Mercoid switch for the higher range on the same installation?

A. Yes, it does, and I may explain that by saying that the M-61 switch, which is the hold fire switch, is a switch that is adapted to operate on temperatures of the order of 125 degrees Fahrenheit. That is, the switch is designed to turn on at, say, 125 degrees Fahrenheit and to turn off at 150 degrees Fahrenheit. The other switch shown here, the M-63, which is the out fire switch, is a switch that is adapted to turn off at a low temperature and turn on at a somewhat higher temperature, the function of that out fire switch being to disable the system when the temperature falls to a point indicating that the fire is definitely out. They want that kind of a switch so that the stoker mechanism will be disabled and discontinue the feeding of fuel into the stoker in the event that the stoker fire goes out. They do not want to have the furnace choked up with fuel.

Q. Mr. Cook, could you offer an explanation as to why The Mercoid Corporation does not offer, or, rather, ceased to offer some time in 1931 they state they brought
234 out the M-61 in 1931 the M-51? Why did they cease to find the M-51 satisfactory for some uses, such as in a stack?

A. Because the M-51 was never intended for use in a stack. It is intended for quite a different use.

Q. Where is the M-51 positioned?

A. It is positioned usually at the top of the furnace and it is responsive to high temperatures in the furnace. It is a switch that is normally closed at low temperatures and it opens at high temperatures, such as may occur if you have a runaway fire in the furnace and the furnace keeps on heating up beyond a safe limit. It is purely a safety switch.

Q. Mr. Cook, I call your attention to Plaintiff's Exhibit 39 and I ask you to state who was primarily responsible for creating it; where you got it and what it is.

A. That sketch I am primarily responsible for. It was made by a draftsman under my supervision for the purpose of showing the way in which a V2-3A relay would be connected in a diagram or wiring system of the sort shown in Exhibit 40. It is this diagram of Exhibit 40 with a V2-3A relay connected in it so that Exhibit 39 shows substantially the details of what is present in the in-
235 fringing device as shown in Exhibit 37. There is one difference, and that is that the safety switch, which is M-51 in Exhibit 37, is connected in the secondary or thermostat circuit, connected in there (indicating on chart), whereas in this diagram the safety switch is connected in the primary circuit of the relay.

Q. Would the safety switch disable the system in either case?

A. It will. It does not make any difference where it is connected.

Q. Do you see in Plaintiff's Exhibit 39 any of the lines in red?

A. Yes; the room thermostat and its connection with the relay, the stack switch or hold fire switch M-61 and its connection to the relay, also the secondary circuit of the relay are shown in red.

Q. Electrically, what is the relationship of the room thermostat and the hold fire switch M-61 to each other so far as the relay secondary coil is concerned?

A. They are electrically connected together in parallel to perform each its control function to the secondary of the relay. I might say that the relay consists of a main switch which controls the stoker motor circuit and serves to connect the stoker motor with the electrical power
236 supply line. This relay switch has a primary coil which is continuously connected with the power line and a secondary coil which is mounted on a tilting frame. This tilting frame also carries the stoker motor switch and the device functions to remain in the normally open position shown to disable the stoker motor, unless the secondary circuit of the relay is closed either by the room thermostat or by the stack thermostat. When this secondary circuit is closed by either of these thermostats the action of the relay is to push the secondary coil away from the primary coil of the relay, thus tilting the stoker switch and closing it for the purpose of placing the stoker motor in operation. That is the function of the relay.

Q. Mr. Cook, I wish you to take the M-11 and show it

to the court and let him see just how one of those switches works so the court will perceive how that tilting is effected.

Mr. Moore: I object to that, your Honor. They can show you the mechanism, how it can tilt, without showing a different instrument which has not been introduced in evidence here.

The Court: This has been introduced?

Mr. Moore: It has been introduced, but has not been
237 described and does not operate in the same way as any of the accused devices.

The Court: It does not?

Mr. Stone: Your Honor, all I wish to show here is this, at the bottom of one of these little mercury tubes there is some mercury and when you tilt it toward these two electric controls at the end the mercury closes the end and makes an electrical connection. I thought it might be interesting to see what Mr. Cook meant when he says it is tilted up like this. You see, when the switch is in that position the electric current cannot flow out this wire, and this one, because it cannot get across the gap, but when you turn it up like this, this mercury is across both of the pole pieces in there and forms a complete connection. That is all I wanted to show. I thought you might be interested. These switches are all essentially the same in this respect.

The Court: All right.

The Witness: Do you wish me to demonstrate it? This little vial, this little glass vial, with a glob of mercury in it at one end of the vial contains the electrical conductors going into the switch. When the switch is in one tilted position the mercury does not bridge the contact between the two electrical conductors that go in at the opposite
238 end, but when that framework is tilted so that the mercury runs up to the end of the switch which contains the conductors, the glob of mercury bridges the gap and closes the switch.

Mr. Stone: Q. Will you now compare Plaintiff's Exhibit 39 superimposed on Plaintiff's Exhibit 37 with the infringing installation shown on Plaintiff's Exhibit 37?

A. In Exhibit 39 we have the M-61 hold fire switch arranged in the stack in position corresponding with the arrangement of the stack switch M-61 in Exhibit 37. We have the room thermostat in position corresponding with the position of the room thermostat in the infringing structure. We have the stack thermostat M-61 and the room

thermostat interconnected together in parallel corresponding with the parallel connection with the corresponding devices in the infringing system. The thermostats in Exhibit 40 are connected over through a V2-3A relay corresponding with the V2-3A relay No. 23 in the infringing structure shown in Exhibit 37 and the relay is connected in the infringing structure with the stoker motor 29 in the same way that it is connected with the stoker motor in Exhibit 39.

As I said before, there is the high temperature limit switch M-51 in the infringing structure and the corresponding switch in Exhibit 39. In Exhibit 39 this switch is connected in the primary circuit of the relay, whereas in the infringing structure it was connected in the secondary circuit.

Q. The control system shown in Plaintiff's Exhibit 39 is identical with the system shown in Plaintiff's Exhibit 37?

A. Yes.

Mr. Stone: Your Honor, I wish to call to your attention the fact that the parallel circuit is one which comes from the room thermostat and one from the stack switch and they connect at two posts. Now, as we progress through subsequent infringing installations, that red outline of two lines coming from a room thermostat to two posts and two red lines coming from a stoker switch or hold fire switch to the two poles will be emphasized again and again, because it has been described as a circuit of two controls in parallel with respect to the operating circuit.

Q. Mr. Cook, I hand you Plaintiff's Exhibit 10 and ask you to tell us what it appears to be and to describe briefly the equipment there shown.

A. Plaintiff's Exhibit 10 is a reproduction of Bulletin 240 tin No. 241-A, issued by Mercoid Corporation to illustrate and describe its type TJV Stokatherm and the type M-11 Pyratherm which is used in conjunction with the Stokatherm. The bulletin gives in some detail instructions for installation and wiring diagrams whereby the Stokatherm and Pyratherm may be applied to furnaces.

Q. What does the bulletin say that the TJV Stokatherm and the M-11 Pyratherm are to be used for?

A. Well, one of the things that is featured, in fact the first thing mentioned, is fire maintenance.

Q. Mr. Cook, will you refer to the diagrams on page 6 of Plaintiff's Exhibit No. 10 and then to Plaintiff's Exhibit

No. 41, which is a display of certain equipment schematically on a transparent background?

A. What was the question, please?

(The question was read by the reporter as above recorded.)

A. Exhibit 41 reproduces the diagram labeled No. 9 at the top right hand corner of page 6 of Plaintiff's Exhibit 10, except that in the diagram No. 9 the item listed as Stokatherm type TJV-3 is shown only partially. The diagram No. 8, however, gives the entire picture of this Stokatherm, and Exhibit 41, therefore, completes the showing by giving all of the details of the Stokatherm, in
241 addition to the wiring and other equipment shown in diagram No. 9.

Q. I superimpose Plaintiff's Exhibit 41 on Plaintiff's Exhibit 38, which is a dotted outline of a furnace which we obtained from one of the other Mercoid circulars, and ask you to comment on the various controls shown in Plaintiff's Exhibit 41 as used on a furnace, and state what their functions are.

A. The stoker motor shown in Exhibit 41, of course, is for the purpose of driving the fuel feed for delivering coal into the furnace. The fan motor and its control switch is for blowing air or performing some other incidental circulating function. The limit switch M-51 is for the same kind of high temperature control and is responsive to the temperature in the furnace, as heretofore described in connection with the other exhibits in which M-51 time limit switches appear.

242 The M-11 stack switch is connected in the stack and is responsive to the temperatures, and it is connected with the Stokatherm. It functions upon low stack temperatures, as when the fire is about to go out. It functions to set in operation a clockwork mechanism, which is driven by a little electric motor, and also operates a solenoid in the Stokatherm, the function of which is to connect the clockwork mechanism with a cam device, which thereafter will be driven at a substantially constant rate of speed through the arc of travel, and after a period of time this cam element engages the tilting framework on which is mounted a hold fire switch, which switch is normally open, but is turned to closed position by the operation of the clock mechanism in order to close that switch. When the hold fire switch is closed, it functions the relay, which is substantially like the V2-3A relay heretofore mentioned, in

order that the relay in turn may close the stoker motor switch and connect the stoker motor in the power line. This hold fire switch is connected with the relay in parallel relationship with the room thermostat, so that closure of the hold fire switch or closure of the room thermostat will function the relay to start the stoker motor in operation.

243 Q. Mr. Cook, in Plaintiffs' Exhibit 40, where is the hold fire switch?

A. M-61 is the hold fire switch.

Q. In Plaintiffs' Exhibit 39, where is the hold fire switch?

A. M-61 is the hold fire switch.

Q. In Plaintiffs' Exhibit 41, what happened to the hold fire switch?

A. It was shifted away from the stack and put up in the Stokatherm.

Mr. Stone: Your Honor, this Stokatherm, TJV3, is Plaintiffs' Exhibit 42. It is a box, as you can see, and can be mounted in any suitable place.

Q. Does that Stokatherm itself have any thermal element for placing in a stack or other heated area?

A. Plaintiffs' Exhibit 42 does not have any thermal element, but it is used in conjunction with an M-11 thermal device.

Q. I hand you Plaintiffs' Exhibit 43 and ask you what that is?

A. Exhibit 43 is the Mercoid M-11 type of thermostat device.

Q. Mr. Cook, will you, using the physical exhibits, 43 and 42 and the chart 41, compare the sequence of
244 operation with the sequence of operation shown in the infringing installation, Plaintiffs' Exhibit 37? Please use indicia so that at a subsequent time we can understand exactly what you were referring to in the two exhibits, Plaintiffs' Exhibit 41 and Plaintiffs' Exhibit 37?

A. In Plaintiffs' Exhibit 37, the sequence of operation is that so long as the fire is burning, when the room thermostat calls for heat, a switch will be closed which will complete the secondary circuit of the V2-3A relay, which is this circuit here (indicating on Exhibit 39), energize the relay and cause the stoker motor to operate to supply more heat. As the heat in the room rises the room thermostat switch will open, thereby disabling the relay and

permitting the stoker switch to open and start the operation of the stoker. If for any length of time the room thermostat has failed to demand heat and the fire operating under stand-by conditions has gradually burned itself to a low ebb, the temperature in the furnace falls to a temperature in the neighborhood of 125 degrees in the stack, which causes the hold fire switch to close, thereby closing the secondary circuit of the relay and causing the stoker switch to close and start the stoker motor, for a sufficient period to replenish the fire. As the fire becomes replenished, the temperature in the fire pot and in the stack will rise to a point where the hold fire switch M-61 opens, thereby disabling the stoker motor.

In the device shown in Exhibit 41 the M-11 Pyratherm is a device with a switch in it and a thermal element which is mounted in the stack of the furnace installation and is shown as M-11 in Exhibit 41. It has an electrical connection through the solenoid part of the Stokatherm TJV3, and also through the motor which drives a clock mechanism, so that when the temperature in the flue drops, as when the fire is about to go out, the switch M-11 completes a circuit for energizing the clockwork, the motor drive clockwork. At the same time the solenoid of the Stokatherm releases a clutch, or, rather, engages a clutch for connecting the Stokatherm clockwork to a cam element. These parts are all embodied in the mechanism shown at the top of Plaintiffs' Exhibit 42. As the cam rotates it engages a framework on which is mounted the hold fire switch, which is the small switch mounted on the tilting frame and actuated by a cam which moves up and tilts it from the off position to the on position.

So that after an interval following the closure of the M-11 switch, the hold fire switch is closed and causes the stoker motor to operate in exactly the same way that the stoker is operated by the hold fire switch in Exhibits 39 and 37.

That is the sequence of operation of the equipment shown in Exhibit 40 for hold fire purposes.

The room thermostat operates the relay and thus controls the stoker motor exactly as the room thermostat does in Exhibits 37 and 39.

If I may sum up the difference in a few words, the hold fire control in Exhibit 41 is accomplishing indirectly what in Exhibits 37 and 39 it is accomplishing more directly.

Q. Now, Mr. Cook, I take Plaintiffs' Exhibit 41 and turn it over and superimpose it on Plaintiffs' Exhibit 37 and ask you what you have?

A. You have the M-11 switch in position in the stack and responsive to stack temperature. You have the stoker motor in position to drive the stoker. You have the room thermostat in the space to be heated, and you have the Stokatherm interconnected in such a way that the hold fire switch is closed through the intermediate elements, namely, the clock with the Stokatherm and the switch of the M-11 device.

247 The hold fire switch is operated in response to temperature drop in the stack, and the operation of the hold fire switch, of course, results in the operation of the stoker motor. The hold fire switch is also operated by the room thermostat when heat is demanded in the room being heated. The hold fire switch and the room thermostat are in parallel relationship for the control of the relay and of the stoker motor.

Q. Mr. Cook, in Plaintiffs' Exhibit 41, as in Plaintiffs' Exhibit 10, where is the relay located with respect to the room thermostat and the hold fire switch on the one hand and the stoker motor on the other?

A. The relay is interposed between the thermostat and the stoker motor.

Q. And is that interposition exactly the same as in Plaintiffs' Exhibit 39?

A. It is.

Q. And that is the infringing installation?

A. That is the infringing installation.

Q. Mr. Cook, with respect to the hold fire switch in the Stokatherm type TJV3, the circuit controlled by the M-11 stack switch bears what relationship?

A. The circuit controlled by M-11 stack switch is simply a circuit for the setting in operation of a mechan-

248 ism for the operation of the hold fire switch. It is simply interposed between the stack and the hold fire switch in order to operate the hold fire switch in response to the falling stack temperature.

Q. Is the circuit of the M-11 Pyratherm itself in the stoker motor circuit?

A. I would say not. The stoker motor circuit is fed from the line and the circuit of M-11 also receives operat-

ing energy from the line, so that this circuit here, including the M-11 stack switch and the clutch operating relay and the clockwork motor, is a circuit that is separate from the stoker motor.

Q. Now, Mr. Cook, does that hold fire switch in the type TJV3 Stokatherm close in response to a falling temperature in the stack?

A. It does, definitely.

Q. Will that falling temperature at which the stack switch or the hold fire switch closes in the stack always be the same?

A. Not necessarily.

Q. I ask you to read Exhibit 8—

The Court: We will take a recess for ten minutes.

(A short recess was here had after which the proceedings were resumed as follows:)

249 Mr. Stone: Q. Mr. Cook, I show you Plaintiffs' Exhibit 8 and ask you to read Claim 1, applying it to the installation shown in Plaintiffs' Exhibit 41, which is taken from the Mercoid circular, Plaintiffs' Exhibit 10.

A. The claim calls for a heating system comprising the combustion pot in the furnace, the stoker means for feeding fuel thereto, the combustion space above the combustion pot, means controlled by the temperature in the rooms to be heated for automatically regulating the fuel feedings means.

That is accomplished by the room thermostat in Exhibit 41, which operates through the intermittent relay to set the stoker in operation when the room temperature drops, and a separate thermostatic control actuated by predetermined minimum temperatures in said combustion space for preventing extinguishment of the fire when operating under low heat requirement conditions.

This last means is the holdfire switch, which is closed by the operation of a mechanical drive through an electric motor, the operation of which is controlled by the M-11 switch.

The M-11 switch is controlled by temperatures in the stack and operates to first set the motor in operation, and connected with a mechanical means for closing
250 the holdfire switch, which when closed operates through the intermittent relay to set the stoker motor in operation.

Q. Just before we recessed did you state that the M-11.

in conjunction with the Type TJV could operate the holdfire switch at more than one stack temperature?

A. Yes, I think it might very well do that.

Q. Now, does the claim call for one pre-determined minimum temperature, or more than one?

A. It says control actuated by pre-determined minimum temperatures.

Q. So that this claim reading specifically upon this installation for the holdfire switch should turn out to be operated at different minimum temperatures in the stack?

A. In my opinion, yes.

Q. Have you read this patent through?

A. I have.

Q. Does it matter whether the stack switch is operated at one minimum temperature or more than one, so far as patentability is concerned?

A. I would say not.

Q. If the prior art had shown a furnace installation wherein the stoker motor was operated by a holdfire 251 switch, which in turn could function at a plurality of different minimum temperatures, would the Cross patent have been granted?

A. In my opinion, it would not have been granted under those circumstances.

Q. The prior art did not show such a thing, did it?

A. No, the prior art did not show any switch—

The Court: Do you patent lawyers just let them go ahead asking leading questions?

Mr. Freeman: You are speaking to Mr. Moore, your Honor?

The Court: I am speaking to you both generally.

The Witness: Did I answer that question?

(Incomplete answer read as above recorded.)

The Witness: A. (Continuing.) —any switch for controlling the stoker motor in response to temperatures in the stack or the firebox.

Mr. Stone: Q. Now, Mr. Cook, referring to Plaintiffs' Exhibit 12 and to Plaintiffs' Exhibit 48, which counsel for the defendant admits is page 5 of Mercoid's catalog No. 11—

Mr. Moore: Of February 1, 1936.

Mr. Stone: Q. (Continuing.) —will you describe how

the TJV Stokatherm is made up from earlier separate controls?

252 A. This TJV Stokatherm consists essentially of a relay, like the V2-3A relay, which is illustrated in Plaintiffs' Exhibit 48, together with a holdfire switch and a stoker switch, M-11, together with clockwork mechanism which has been supplied for operating the holdfire switch in response to the operation of the M-11 stoker switch.

The holdfire switch is from earlier equipment, the relay is from earlier equipment, the M-11, I presume, is a recently designed switch particularly for the purpose of operating the clockwork mechanism and thereby sets the control operation.

Q. That is, does the TJV Stokatherm possess an outfire switch?

A. It does. The outfire switch is shown in the TJV3 and its function is like the outfire switch M-63 in Diagram No. 2 of Plaintiffs' Exhibit 12.

In other words, the outfire switch and the holdfire switch, which in the earlier arrangement of Exhibit 12 were located in the stack, have been transferred from that position to the housing of the Stokatherm equipment, and is now operated directly, or rather should I say remotely, from the thermal element that is placed in the stack.

Q. Mr. Cook, what is the relationship of the M-11
253 circuit to the holdfire circuit and the stoker motor circuit?

A. The circuit of the M-11 is in advance of the holdfire switch and is interposed between the thermal element and the holdfire switch, which is thereby operated and caused to function the stoker motor.

Q. If Judge Reeves held that the interposition of a relay between the room thermostat and the holdfire switch on the one hand, and the stoker motor on the other did not effect infringement of the Cross patent, what can you say to the placing in advance of the holdfire a circuit switch as such as that of the M-11?

A. I would say that, a fortiori, the positioning of electrical connection means between the thermal element in the stack and the holdfire switch does not avoid infringement, for in the infringing device in the earlier suit we have a thermal element in the stack; we have mechanical means connecting that thermal element for the operation of the holdfire switch, and which operates the stoker motor.

In the Stokatherm TJV type we have the thermal element in the stack and we have electrical and mechanical means interposed between the thermal element and the holdfire switch for the operation of the holdfire switch.

254 In the earlier device it was simply a mechanical connection. Here in the Stokatherm device it is a mechanical connection, an electrical connection and a mechanical connection. Simply the addition of interposed means.

Q. Mr. Cook, have you examined the remaining diagrams shown on Page 6 of Plaintiffs' Exhibit 10?

A. I have.

Q. Is there a single diagram there which does not show an installation falling within the terms of the claims of the Cross patent in suit?

A. In my opinion, all of these diagrams show apparatus which fall within the terms of the claims, in that they all show the combination of a room thermostat in parallel with a holdfire thermostat for the dual operation of a stoker motor.

Q. Is there anything in the circular which shows the use of a Stokatherm alone, or with the M-11, for a purpose other than in an installation such as that disclosed in the Cross patent?

A. No. That is the only purpose of this Stokatherm and M-11 switch.

Q. I call your attention to the inside of Plaintiffs' Exhibit 42 and ask you whether or not the lefthand diagram shows the essential element outlined in red in

255 Plaintiffs' Exhibit 41?

A. Yes, it does.

Q. Mr. Cook, I wish to call your attention to the fact that both of the TJV Stokatherm diagrams in the back of the cover of Plaintiffs' Exhibit 42 show the clock control and the solenoid connected differently than as shown in Plaintiffs' Exhibit 41. Will you state the reason for that and whether or not it is material to the infringement of the patent?

A. It is not material to the infringemen of the patent. The sketches shown in the cover of the physical Exhibit 42 correspond with wiring diagrams No. 7—well, one of them corresponds with Diagram No. 7 and the other one does not correspond with any diagram on Page 6 of Plaintiffs' Exhibit 10.

The wiring circuit which is shown in Exhibit 41 shows the clutch actuating solenoid and the clock motor connected in series for operation on 220 volts, whereas the diagrams in the front of Exhibit 42 show those elements, that is, the solenoid and the clock motor, connected in parallel for operation on 110 volts.

Q. In your reading of the various Mercoid literature, is it customary for the manufacturer to bring out each type of control, such as M-61, as one type and the TJV 256 as another type in various sub types to handle various voltages and various special problems?

A. That is true.

Q. Mr. Cook, I show you Plaintiffs' Exhibit 19, which is a circular issued by The Mercoid Corporation, being Bulletin No. 242. I will ask you to tell us what that appears to be.

A. This Bulletin, Plaintiffs' Exhibit 19, is a copy of a pamphlet describing the type JMV, an outstanding stoker control, incorporating various important features. It describes the Type JMV stoker control and furnishes information for the installation of the control.

Q. Mr. Cook, I ask you to refer to the diagrams on the back page of Plaintiffs' Exhibit 19 and to compare those diagrams, and comment thereon, with Plaintiffs' Exhibit 45.

A. Plaintiffs' Exhibit 45 is a reproduction of the diagram at the lower lefthand corner of the back page of Exhibit 19. The diagram has been slightly modified, in that the stoker motor is shown over at the left in Exhibit 45, instead of directly underneath the type JMV Stokatherm. In Exhibit 19 the stoker motor was vertically underneath.

Q. I now take PLAINTIFFS' EXHIBIT 45, which 257 I offer in evidence—

(The exhibit was so marked.)

—turn it over and superimpose it on Plaintiffs' Exhibit 37, and ask you to relate the various elements shown in Plaintiffs' Exhibit 45 to the elements shown in the infringing installation in Plaintiffs' Exhibit 37.

A. In Exhibit 45 there is shown a stoker motor in position to drive the stoker mechanism of a furnace. It is connected with a switch for the control of the stoker, the switch forming a part of a relay consisting of the switch, the primary relay winding and the secondary relay winding shown in red.

The Stokatherm type JMV equipment in addition to the relay includes a holdfire switch, an outfire switch, and there is in the type JMV relay, but not shown on this diagram, a thermostatic element adapted to be positioned in the stack, which element through a mechanical connection releases a brake or clutch connected with a clock mechanism in order to connect the mechanism with the holdfire switch.

This clock mechanism is indicated by a coil representing the clock motor. This coil is continuously connected with the lines, so that the clock is in continuous operation.

258 The holdfire switch thus will be operated in response to the actuation of the thermal element through the clock mechanism in order to close the holdfire switch when the temperature in the stack drops to the point where the fire is about to go out.

When the hold fire switch closes, it operates the relay to close the stoker switch of the relay and put the stoker in operation to maintain the fire.

In parallel relationship with the holdfire switch is connected the room thermostat, which also serves, when the temperature in the room falls, to close the room thermostat switch, energizing the relay to put the stoker motor in operation.

The entire Stokatherm mechanism which is enclosed in the border is adapted to be mounted in the stack or flue of the furnace with the thermal element in position to be affected by the gases of the stack.

The Stokatherm type JMV incorporates the type V2-3A and relay, the holdfire switch, a clock mechanism and the outfire switch, all in one box together with the thermal element for insertion in the stack.

Q. In the course of making your last answer, Mr. Cook, you said the clock continuously operated. Is that correct?

259 A. That is my understanding.

Q. What do you mean by the clock?

A. It is a clockwork mechanism that is driven by an electric motor, which is represented by the coil disposed immediately under the holdfire switch. This coil is connected to the line and is in continuous operation so long as the outfire switch is closed.

Q. The motor is in continuous operation, and if you consider all this train in here as being the clock, that is

correct. Mr. Cook, the clock mechanism is brought into play by what?

A. The clock mechanism is driven by the motor, and, as I understand this device, Plaintiffs' Exhibit 44, the clock mechanism is in continuous operation. There is a clutch device which is operated by the thermal element to permit the clock to drive a cam, which in advancing eventually engages the bracket on which is mounted the holdfire switch and causes the switch to close.

Q. Mr. Cook, comparing Plaintiffs' Exhibit 45 to the infringing installation in Plaintiffs' Exhibit 39, are the circuits shown in red identical?

A. Yes.

Q. Will you point out the holdfire circuit in each one?

A. The holdfire circuit in Exhibit 45 is the holdfire 260 switch at the top of the JMV Stokatherm and the secondary circuit of the relay; thence through the relay to the stoker motor. In Exhibit 39 the holdfire circuit is the holdfire switch M-61 connected with the secondary winding of the relay and thus through the relay to the stoker motor.

Q. In Plaintiffs' Exhibit 39 the holdfire switch is mechanically operated by virtue of being placed in mechanical relationship to a thermal element mounted in the stack, is that right?

A. That is right.

Q. And is the same true in Plaintiff's Exhibit 45?

A. It is substantially true, although the mechanical connection between the thermal element and the holdfire switch shown in Exhibit 45 is not the exact same type of connection as prevails between the thermal element and the holdfire switch in Exhibit 39, the difference being that in the Stokatherm the mechanical connection has a lost motion in it and has a clock-driven cam.

Q. Now, Mr. Cook, will you compare the circuits of the room thermostat in Plaintiffs' Exhibit 45 and the infringing installation in Plaintiffs' Exhibit 39?

A. They are the same in both. The room thermostat is connected to the secondary winding of the relay, thence 261 through the relay to the stoker motor, which is the same in both cases.

Q. Is the system shown in Plaintiffs' Exhibit 45 the equivalent of the system shown in Plaintiffs' Exhibit 39?

A. In my opinion, it is.

Q. In what way does the system shown in Plaintiffs'

Exhibit 45 simplify over the system shown in Plaintiffs' Exhibit 41?

A. The system shown in Exhibit 45 combines in the one unit the thermal element and the other mechanism that is in the Stokatherm, while eliminating the electrical connection between the stack switch and the holdfire switch. It eliminates the need for an electrical circuit, since the connection between the thermal element and the holdfire switch in the Type JMV is a mechanical arrangement.

Q. By that you mean, Mr. Cook, that the TJV unit is placed on the wall of the basement somewhere, while the JMV unit itself is a control placed in the stack?

A. Yes.

Q. The JMV has a thermal element right in it, while the other, the TJV, does not, and hence requires another piece of equipment?

A. The TJV requires the M-11 switch, Exhibit 43.

Q. Mr. Cook, I hand you Plaintiffs' Exhibit 8, and 262 ask you to read Claim 1 or any claim on the installation shown in Plaintiffs' Exhibit 45, as superimposed on Plaintiffs' Exhibit 37, and tell us whether or not all of the elements of the claim are present?

A. Claim 1 calls for a heating system comprising the combustion pot, a stoker means for feeding fuel thereto, a combustion space above the combustion pot, means, which is the room thermostat, controlled by the temperatures of the rooms to be heated for automatically regulating the fuel feeding means.

In Exhibit 45, this is a connection through the Type JMV Stokatherm, including the relay therein, for the operation of the stoker motor, and a separate thermostatic control actuated by pre-determined minimum temperatures in said combustion space for preventing extinguishment of the fire when operating under low heat requirement conditions.

This is the mechanism of the JMV Stokatherm, which includes the thermal element in the stack, the motor, which is in continuous operation, driving a clock mechanism, and the mechanical clutch means operated by the thermal element for connecting the motor with a cam for tilting the holdfire switch. When the holdfire switch is tilted to 263 closed position it causes the relay to operate to function the stoker motor.

That meets the terms of Claim 1.

Q. With respect to the room thermostat and the holdfire switch on the one hand to the stoker motor circuit on the other hand, what relationship does the relay have?

A. The relay is interposed between the holdfire and the room thermostat switches and the motor. It is in the same relationship as in the structure, infringing structure in the St. Louis suit.

Q. Missouri suit.

A. Missouri suit.

Q. Exhibit 39.

A. Exhibit 39.

Q. Now, Mr. Cook, have you examined the operation of the Type JMV Stokatherm?

A. I have.

Q. Under all conditions would the JMV Stokatherm function the stoker at a single temperature in the stack?

A. Not necessarily. In a given installation it would likely function the stoker motor at approximately the same temperature.

Q. Under unusual circumstances, might it operate differently?

A. It might.

264 Q. Does Claim 1 call for the holdfire mechanism operating at a pre-determined minimum temperature or at a plurality?

A. No. It calls for pre-determined minimum temperatures.

The Court: If you don't mind, we will take a recess now until tomorrow.

Mr. Freeman: Mr. Moore, do you happen to have the statutes on the anti-trust laws that you are relying on, that you were to have this morning?

Mr. Moore: Yes.

Mr. Freeman: Or the sections of the statutes?

Mr. Moore: May it please your Honor, shall we start at ten o'clock tomorrow or ten-thirty?

The Court: Well, we will start at a quarter after ten. We do not have any traction lawyers here then. I think we will have a couple of other matters up, so you had better come in at ten-thirty.

Mr. Moore: From the record, the defendant is relying on Title 15, Sections 1, 2 and 15 of the Federal Code Annotated.

Mr. Freeman: Thank you.

Whereupon an adjournment was taken to 10:30 o'clock A. M., Wednesday, September 10, 1941.

265 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company,
*vs.*
The Mercoid Corporation.
Before Igoe, J.

Wednesday, September 10, 1941
10:30 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Bair, Freeman, Moore.

The Court: How long do you folks think you are going to take in this case?

Mr. Stone: I think I should be done in fifteen minutes, your Honor.

The Court: What about you, Brother Moore?

Mr. Moore: I shall take the rest of the morning and possibly the afternoon.

The Court: Is that all?

Mr. Moore: I should think so.

Mr. Freeman: I should like to get that in writing.

The Court: I thought you had two witnesses?

266 Mr. Moore: That is on cross examination. Oh, then I have three witnesses to put on. One will take at least five hours on direct and the other two will take five hours between them.

The Court: You will finish this week?

Mr. Moore: I will try to. I would like to.

Mr. Freeman: Minneapolis-Honeywell would like to be heard before this case is all over. We cannot put in any of our case until at least after Brother Moore here does his job.

The Court: Where is our witness?

Mr. Stone: Mr. Cook.

JUNIUS F. COOK, JR., a witness called on behalf of plaintiff Mid-Continent Investment Company, having been heretofore duly sworn, resumed the stand and testified further as follows:

*Direct Examination (Continued) by Mr. Stone.*

Q. Mr. Cook, I show you the original of Plaintiffs' Exhibit 19 and ask you where that came from?

A. This original pamphlet, Bulletin No. 242, was wrapped up in the package in which Exhibit 44 was purchased.

267 Q. Mr. Cook, I hand you copy of a sheet of drawings, the original of which I submit to the court, and ask you to tell us what it is and to compare the devices there shown.

A. This drawing contains three figures, each of which is a schematic drawing of the three systems that we have been discussing here. The drawings were made by a draftsman under my supervision, for the purpose of demonstrating the similarity of the structure and arrangement and the parts.

Fig. 1 shows the connections in Exhibit 37, which is the infringing device in the previous suit, Mid-Continent *vs.* Smith.

Fig. 1 shows in the circle at the top the thermal element 11, which is disposed in the stack. It shows the rod which connects it with a device 15, having a part 13, which is operable to tilt the mercury switch. The circle represents the fact that the parts shown inside are in one unit.

The switch is connected with the thermostat 22 in parallel relationship and both switches are connected with the secondary coil of the V2 3A relay, which serves to operate the stoker motor illustrated at the bottom of the figure.

268 Of the devices shown in dotted lines, the M-51 device is indicated as connected in the secondary circuit of the relay, as shown in Exhibit 37. The alternate connection for the M-51 safety switch is shown connected in the primary circuit, which is the connection illustrated in Exhibits 12 and 39.

The out fire switch M-63 is an added part which was not present in the infringing device of the previous suit. It is shown connected as indicated in the pamphlet Exhibit 12 for outfire control purposes.

Fig. 2 shows the Mercoid type AJV control as it is illustrated in Exhibits 1041, 42 and 43. The arrow connecting the V2-3A relay with the dotted line showing of the TJV casing is to indicate that the relay is actually assembled in that casing.

In the top of the TJV casing as shown in this drawing, the thermal element 11 and the mercury switch are shown enclosed in a circle. This is to indicate that those parts are separate from the parts which are enclosed in the casing and form the M 11 unit, so marked on the drawing.

This unit consists of a mechanical drive between the thermal element 11 and the switch. The switch is elec-
269 trically connected with the devices indicated generally at 17, which consists of the clutch operating relay and the electric motor, also the cam drive 13, which actually trips the hold fire switch.

The hold fire switch is connected in parallel relationship with the room thermostat 22 and both are connected with the secondary coil of the relay, which operates to control the stoker motor shown at the bottom.

There are auxiliary elements, control elements, shown in Fig. 2. These are the M-53 fan controlling relay, the fan and the M-51 high temperature protective switch, which are also shown in Exhibit 41.

The out fire switch is shown in dotted lines. That is an additional element that is incorporated in the TJV casing and it is actuated by the cam drive 13, which in traveling clockwise first actuates the hold fire switch, and if the mechanism is not tripped will eventually operate the out fire switch, to in turn disable the entire mechanism.

Fig. 3 shows the JMV control. The rectangular dotted line at the top of the figure indicates the casing of the JMV relay and all of the parts shown within that dotted border are in the JMV unit.

The arrow from the relay down to the bottom indicates that this relay also is enclosed within the
270 casing of the JMV unit.

The JMV unit consists of the thermal element 11, which has a mechanical connection indicated generally by the numeral and arrow 17 for releasing the clutch connection between the electric motor 15 and the switch tripping cam 13. This cam is similar to the cam 13 of the TJV device, and when the clutch is operated will start in motion to first actuate the hold fire switch, and then if the temperature in the flue continues to drop, indicating

that the fire has actually gone out, the cam 13 will eventually trip the out fire switch and disable the entire system.

The hold fire switch is in parallel relationship with the cam thermostat 22 and both are connected with the secondary winding of the relay, which is indicated by the numeral 23. The relay, of course, serves to operate the stoker motor shown at the bottom of the view.

The JMV showing in Fig. 3 also includes in dotted lines the M-51 high temperature protective switch and also the out fire switch.

Mr. Stone: I offer in evidence this drawing as PLAINTIFFS' EXHIBIT 46.

(The exhibit was so marked.)

271 Mr. Stone: Q. Mr. Cook, in all of the systems shown in Plaintiffs' Exhibit 46, what starts the chain of events which ultimately closes the hold fire switch?

A. The thermostatic element 11 is what starts the chain of events in each case.

Q. Where is that element located?

A. In an actual installation it is exposed to the temperature in the fire pot, that is to say, the temperature in the flue, which is connected with the fire pot of the furnace.

Q. So that in each case the temperature responsive element is responding to the conditions of the fire in the combustion chamber?

A. That is true, and through suitable transmitting elements in each case the action of the temperature response element 11 is to close the hold fire switch and thus start the stoker motor.

Mr. Stone: At this time I would like to offer in evidence as PLAINTIFFS' EXHIBIT 47, a certified copy of the assignment of errors in the suit between Mid-Continent and E. O. Smith in the Southwestern Division of the Western District of the Federal Court for Missouri.

(The exhibit was so marked.)

Mr. Stone: That will close the direct examination of
272 our expert.

*Cross-Examination by Mr. Moore.*

Q. Mr. Cook, you referred this morning, and throughout your direct examination yesterday, to the accused device in the Missouri suit as being Plaintiffs' Exhibit 37. You said device. The device is a system, is it not?

A. That is correct. The entire system.

Q. In giving your qualifications as an expert in electrical engineering, you also stated your practical experience with electric switches. Does your practical experience include temperature responsive electric switches, such as used in heating systems?

A. Yes, sir.

Q. You have testified as to the operations of the M-51 furnace control and the Mercoid M-61 limit switch or stoker control. Have you ever inspected an M-61?

A. No, I have not.

Q. Then you cannot produce a specimen of the M-61 stoker switch?

A. No, sir.

Q. And Mr. Cross stated that the heart of the Cross invention was the stoker switch, did he not?

A. I do not know. I think the record will show that.

273 Q. It shows that in the record. Then you cannot produce here in court one of the articles you are relying on to prove infringement, can you?

A. No.

Mr. Freeman: Does the defendant have one of the devices? It is my understanding that we asked for one, or, at least, Mr. Stone asked for one, and you do not have any.

Mr. Moore: The defendant has none, either.

Q. Have you ever inspected the physical article of M-51?

A. Not the physical article. I have inspected the Mercoid bulletins that describe both the M-51 and the M-61.

Q. Then you have never compared the physical articles of the M-51 with the M-61, have you?

A. That is right. I have never compared them physically.

Q. Do you know how the operating mechanisms within the casing as shown in the various bulletins of the M-51 and M-61 operate?

A. Exactly how they operate?

Q. Yes.

A. I have an idea how they operate.

Q. If I show you an M-51 manufactured by the

274 Mercoid Corporation, would it assist you in any way?

A. It might, yes.

Q. I will show you here an article bearing a name

plate "The Mercoid Corporation, Mercoid switch," which is identified under type as M-51.

Mr. Freeman: Mr. Moore, it might be helpful if I asked a question there. Is this to exemplify what is made now or something that was made some twenty years ago?

Mr. Moore: No, that was made at the time the bulletins came out announcing the M-51.

Mr. Freeman: And will you give us the date of that?

Mr. Moore: I cannot, offhand, no, without going through all of my records.

Mr. Freeman: We are trying to find out whether that is something prior to 1926 or subsequent to 1926, and if we knew it now it might be helpful in our following this line of testimony.

Mr. Moore: I believe it was subsequent to 1926.

Mr. Freeman: All right, thank you.

Mr. Moore: Q. I believe it was stated yesterday by Mr. Cross, in referring to the record of the Missouri suit and the stipulation therein, that the M-51 has a range of 50 to 650 degrees, is that correct?

A. Are you asking me whether this device has that 275 range?

Q. Yes, I am.

A. This physical device which I have in my hand, which is identified by serial number M-99515, has a calibration plate on the front that is graduated in a scale, which I presume is a temperature scale, between the range of—well, the lowest I can get it is 75 degrees, although the scale indicates that it ought to be adjustable down to 50. Yes, it goes down to 50 degrees and it goes up to approximately 650 degrees Fahrenheit, I notice.

Q. You never adjusted neither the M-51 nor the M-61 before, have you?

A. I have never adjusted this particular type of Mercoid switch. However, I have adjusted similar types of mechanism.

Mr. Moore: I will leave that here on the rail. I may want to ask you some more questions about it.

Q. I notice in the typewritten record of the testimony you gave yesterday on direct examination on Page 197 that you were asked the question: "The prior art did not show such a thing, did it?" And you started to reply, and you said, as the reporter has taken it down, "No, the prior art did not show any switch—." At that time the

Judge asked a question, which was replied to by Mr.
276 Freeman, and then the Judge made another statement. Then you asked, "Did I answer that question?" and the record notes: "(Incomplete answer read as above recorded.)", and then the answer continues "—any switch for controlling the stoker motor in response to temperatures in the stack or the firebox."

277 Now, my recollection is that you continued your answer during part of the court's statement, in which you said the prior art did not show any switch in the passage of the application of the Cross patent through the Patent Office. Do you recall what you said at that time?

Mr. Freeman: Well, the record speaks for itself.

Mr. Moore: The record has a hiatus in between there.

Mr. Freeman: Why not ask him if he wants to qualify or add to that answer, rather than try to interpret what the record now shows?

Mr. Moore: Well, will the witness please state? Is that answer correctly recorded?

A. Yes, it is substantially correct. The only thing I would add to it is that it is that prior, before the Patent Examiner. That is as I understood the question.

Q. Then you wish to amend that answer now or make a statement that the prior art did not show any switch before the Patent Examiner?

A. I have never made a complete search of the prior art that was available at that time. The only art that I have scrutinized at all closely in connection with this suit was the art in the file history, that is, the art that was before the Examiner when he allowed the claims
278 in the Cross patent. That is what I intended to say in that answer.

Q. That is my understanding, too. The history or the actions of the Patent Office were also introduced in evidence in the record before the court in the Missouri case. Have you gone through the record in this case?

A. To some extent, yes.

Q. I call your attention to page 137 of the record, which is Plaintiff's Exhibit—what?

Mr. Stone: Twenty-seven.

Mr. Moore: (Continuing.) —and ask you to read the letter appearing there from the Patent Office examiner.

A. Mr. Moore, do you want me to read the part that is in typewriting? I assume you want what is typewritten there.

Q: Just the body of the letter. It speaks for itself.

A. Yes. Well, this is the Paper No. 6 action, issued May 16, 1928, mailed at the Patent Office May 17, 1928, and it reads:

"In response to amendments filed December 10, 1927.

"Reference is made of record:

"Gray 1,667,001 April 24, 1928 236-46.

279 "Powers 416,947 December 10, 1889 236-9.

"The claims are rejected on Gray in view of Powers. Gray discloses a dual control device operating in the manner defined, except that he uses a time control to keep the fuel feed going at a low rate when there is no demand for heat. Powers discloses the use of two thermostats which will control a damper in the same manner. There is no invention broadly in substituting a dual thermostatic control for the dual controls disclosed by Gray, or in controlling the fuel feed instead of the damper in the manner shown in Powers."

Q. Now, that is an official action during the application of the Cross patent here in suit, is it not?

A. Yes, that was an official action that was later superseded by the allowance of the—

Q. I didn't ask you that. Please answer my question. Now I ask you to look on page 155—

Mr. Bair: Your Honor, if this is directed towards invalidating the patent, it is objected to, on the ground that counsel has conceded the patent is valid.

Mr. Moore: There is no intention of attempting to invalidate the patent, your Honor. They have used the
280 expression "dual control" as though it was something new and originated with the Cross, and I wanted to show that Cross was not the first one to make a dual control, and I think I am within my rights, your Honor.

The Court: I understand your contention is that you are not attempting to invalidate the patent.

Mr. Moore: No, your Honor.

Q: Will you please read the official action of June 14, 1929, on the application of the Cross patent, as appears on page 155 of the record?

A. "Responsive to amendment filed June 5, 1929.

"Additional references made of record:

"Teal 1,067,627 July 15, 1913 236-9,

"Emery 1,234,317 July 24, 1927 110-54,

"Ousdahl 1,472,280 October 30, 1923 236-9X,

"St. Clair 1,633,465 June 21, 1927 110-54.

"Claims 1-9 have been cancelled.

"Claims 10-14 have been added.

"Claims 10-14 are rejected as drawn to an aggregation.

"The room thermostat and the thermostat in the 281 fire pot do not together make a true combination with the stoker within the meaning of the patent statutes. Either thermostat might be eliminated without in any way affecting the operation of the other. Each operates to start and stop the stoker motor entirely independently of the other. The number of thermostats connected in parallel to the stoker motor might be multiplied at will, each being placed at any desired location. See ex parte Moorhouse 382 O.G. 845.

"Ousdahl, Emery and St. Clair show thermostats controlling stokers from such positions as to prevent extinguishment of the fire."

Q. I ask you now to look at the patent to Teal, which appears on page 178 of the record.

A. Yes, I have it.

Q. Are you familiar with that patent?

A. I have read it.

Q. That patent discloses a dual thermostatic control, does it not?

A. It shows a bonnet thermostat and a room thermostat controlling dampers.

Q. That is a dual control, according to your definition of that, is it not, or to your understanding?

282 A. It is not a dual control of the stoker motor.

Q. I did not ask you that. I asked you if it showed a dual thermostatic control for a motor.

A. I have said it shows two thermostats for operating a damper. If that is dual control, then it is a dual control.

Q. Do you consider that an answer to the question?

A. I think so.

Q. Well, is your answer yes or no?

A. It does not show a dual thermostatic control for a motor.

Q. What does it show?

A. It shows two thermostats for operating dampers.

Q. How does the damper operate? By a motor, does it not?

A. I presume it is operated by a solenoid.

Q. Do you find anything in the specifications referring to a solenoid for operating the dampers?

A. I find here on page 1, line 57, the statement that the means for actuating the furnace draft is called a motor and is—

Q. Will you also look on page 82, which is page 2 of the patent, and read what it states, beginning on line 10?

A. "Five designates a motor."

283 Q. That is the answer then, is it not, that the dampers are operated by the motor 5, which is shown on the drawing?

A. Yes. I saw that 5 on the drawing and it does not look like a motor to me.

Q. The specifications so describe it, do they not?

A. That is right.

Q. Then the patent to Teal does show a dual thermostatic control for controlling a motor, does it not?

A. Yes, I presume it shows a dual control.

Q. As far as you understand from your mechanical experience and being a patent attorney, you would say that it does control a motor?

A. That is right.

Q. I ask you to look at the Edgecomb patent on page 188 of the record. Are you familiar with that patent?

A. To some extent.

Q. Referring to the drawing, the parts 44, 45 and 46 indicate a room thermostat, do they not, or 51 and 52? Within that box up there, indicated by 45 and 46, there is a room thermostat, isn't there?

A. Yes, I would say that is a room thermostat.

Q. Now, if you will look at the parts indicated by figures 47, 48, 49 and 50 within the furnace casing,

284 that is a thermostat?

A. Yes, that is considered to be a bonnet thermostat.

Q. And they are both connected to operate the motor 37, are they not?

A. Yes, I would say that is right.

Q. Then the Edgecomb patent also shows a dual thermostat control for controlling the operation of a motor?

A. Yes, that is correct.

Q. Then the term "dual thermostatic control for controlling the operation of a motor" did not originate with Cross, did it?

A. Not as broadly as that, but for controlling a stoker motor it did.

Q. I did not ask you that. I asked you whether or not the dual thermostatic control for controlling the operation of a motor did or did not originate with Cross. Please answer yes or no.

A. That broadly, no.

Q. Referring to your testimony in this case yesterday and particularly to claim 1 of the Cross patent in suit—has your Honor a copy of this patent?

The Court: Yes.

Mr. Moore: Q. (Continuing.) —the last phrase in Claim 1 reads: "and a separate thermostatic control
285 actuated by predetermined minimum temperatures in said combustion space for preventing extinguishment of the fire when operating under low heat requirement conditions."

Will you please explain why in Claim 1 it specifies predetermined minimum temperatures, in the plural, while in the other four claims it specifies a predetermined minimum temperature in the combustion space?

A. In my opinion, the reason why there is a variance in the phraseology of the several claims is that the particular range was of no particular importance to the Examiner in allowing the claim. The Examiner realized that the essence of this invention was about the starting and stopping of the stoker motor at a time when the fire was about to go out, which is represented by conditions in the fire pot and the stack. That, in combination with the room thermostat accomplishing the dual-control of the stoker motor, apparently was considered by the Examiner to be the real meritorious contribution made by Cross entitling him to a patent, so the matter of whether it is a specific temperature or any temperature can be considered indicative of a set of conditions which if contained will result in the fire going out.

286 Q. Well, do you mean that there must be a predetermined low temperature and a predetermined high temperature?

A. No, not necessarily. I would say that any temperature in there that will indicate that the fire will ultimately go out unless the stoker is turned on is what Cross really invented.

Q. Now, look at line 28 on page 2 of the patent. It

states there, "and this thermo-couple is set at a predetermined temperature," does it not?

A. That is right.

Q. And that agrees with your understanding that the use of "temperatures" does not make any more difference in the operation of the device than "temperature" as specified in the other claims?

A. No, I do not believe that any particular temperature is essential to this patent. The desired result will be obtained and the essence of Cross' invention will be produced, though that thermostat may be an inaccurate thermostat, as long as it will turn the stoker on when the fire gets down to the point of going out.

Q. But the instrument must be set at some temperature, must it not?

A. Well, I can visualize all kinds of thermostat switches
287 that might be required to be set at a certain temperature. There could be incorporated a delay action in there and have the stoker turned off at a different temperature than what the thermostatic switch is set for.

Q. Then that would not be in accordance with the specifications of the Cross patent?

A. The specification is describing his specific embodiment.

Q. It states that the thermo-couple is set at a predetermined temperature, does it not?

A. In this particular embodiment, yes.

Q. Does it state at any other place in that specification where it is not set at a predetermined temperature?

A. I do not know.

Q. You are acquainted with the patent. You have read it carefully, have you not?

A. Yes.

Q. Is it your understanding, then, of the invention defined in these claims that a separate thermostatic control for preventing extinguishment of the fire is actuated at predetermined minimum temperatures?

A. I am not under the impression that the patent is so limited.

Q. What does the claim state? What does claim 1 state?

A. In that respect it says "a separate thermo-
288 static actuated by predetermined minimum temperatures in said combustion space for preventing extinguishment of the fire."

Q. Then you must have a predetermined minimum temperature, must you not, to infringe this claim?

A. Yes.

Q. Now, the second claim—

A. That all depends on what your interpretation of predetermined minimum temperature is.

Q. What would you give as the definition of predetermined minimum temperature?

A. According to this patent, it is the temperature at which the fire is expected to go out. It will vary in each individual separate installation. The furnace in my house, because of the coal I am using, might go out at a stack temperature somewhat lower than in your house, assuming you have a coal stoker.

Q. What would be the technical definition of predetermined temperature, without giving any exhibits to explain your definition?

Mr. Bair: That is objected to as immaterial.

The Court: The objection is overruled. You folks must understand that when you proceed with the examination here and leave the door completely open and ask any
289 kind of a question that comes to your mind, we are going to let the other side ask the same kind of questions. You are not going to run fast and loose here. If we are going to permit that kind of an examination on one side, it is going to be permitted on the other. If you can stay around here for a couple of weeks, I can stay here too.

The Witness: A. To me the word "predetermined" means something that can be ascertained, although not necessarily fixed in advance.

Mr. Moore: Will you repeat that, please?

(The witness' last answer was read as above recorded.)

Mr. Moore: Q. Well, does not predetermined usually mean something that can be determined in advance?

A. By a setting, yes, but it does not necessarily have to be a particular temperature.

Q. But it is at a predetermined temperature at which an instrument can be set, is it not?

A. It may be fixed by all these surrounding conditions.

Q. I didn't ask you that. An instrument can be set at a predetermined temperature, can it not?

A. Yes, an instrument can be set, yes.

Q. I did not ask you whether it operated at that

290 temperature or not. I believe Mr. Cross stated in his testimony that the hold fire switch used a predetermined low temperature of about 125 to close and a predetermined high temperature of between 150 and 200 to open. Do you remember that?

A. I seem to remember that he said those were the ranges used in the installation in the previous suit.

Q. Have you ever read and do you understand the advertising matter of The Mercoid Corporation in relation to the M-61 stoker control that has been introduced in evidence?

A. I believe so.

The Court: We will take a ten minute recess.

(A short recess was here had, after which the proceedings were resumed as follows:)

291 Mr. Moore: Q. Mr. Cook, before asking you in regard to the advertising matter, there is one more question I would like to ask in regard to this M-61. The M-61, the heart of the control system here in the Smith residence, according to the record in the Missouri suit, was set at about 115 degrees Fahrenheit low and about 150 degrees Fahrenheit high. Does that indicate to you minimum temperatures at which this control could operate in comparison with the entire range of that control from 50 to 650 degrees Fahrenheit?

A. Your statement would indicate to me that the thermostat was going to close the switch at 115 degrees and open the switch at 150?

Q. 138, I think it was.

A. 138?

Q. Yes.

A. Whatever the setting was.

Q. They are predetermined temperatures, are they not, on the instrument?

A. On the instrument? Yes.

Q. You have read and are familiar with Plaintiffs' Exhibit 29, which has been identified as page 7 of the Mercoid bulletin A-14 of February, 1931, have you not?

A. Yes, I have read this.

292 Q. And you have also read Bulletin 240, dated March, 1933, Plaintiffs' Exhibit 12, have you not?

A. Yes, sir.

Q. Now, referring to this page 7, Plaintiffs' Exhibit—what is the number of that?

A. 29.

Q. (Continuing.) —29, I ask you to read the first two paragraphs in the righthand column under the title or heading, "Type M-51 and M-52 warm air furnace controls."

A. "The Type M-51 Mercoid control has been designed to prevent the heating of stoker fired warm air furnaces.

"It is identically the same as the Fig. M-61 stoker control, except that it has an adjustable mounting flange and a longer sleeve which permits the bi-metal operating coil to extend farther into the furnace. By means of the adjustable flange the instrument can be easily installed on any furnace hood where the angle is from 30 to 90 degrees.

"The Type M-52 Mercoid Control is identically the same as the Type M-51, except that it has two separate circuits, the one closing on a dropping temperature and the other on a rising temperature."

Q. Can you state whether or not it is a fact that the M-51 and the M-61 are identical, with the exception that the
293 M-51 has a longer stem?

A. I do not know. I never actually had seen an M-51, but your literature here says that that is the relationship.

Q. You have the M-51 before you. You mean you have never seen an M-61?

A. That is right.

Q. As far as you know, then, that statement that you just read is correct?

A. As far as I know, it is.

Q. Now can you point out on the illustration of the M-61 on page 7 in the side view where you find a mounting flange?

A. This M-61 is supposed to go into the stack and there appears to be a flange midway of the instrument which is flat, and my assumption is that that flange ought to be curved in order to fit a stack.

Q. Well, is—

A. That item there, that flange, might be a mounting flange.

Q. Now, what part forms the sleeve referred to in that description given?

A. I do not know for sure what is intended. It might possibly be the casing extension between the flange and
294 the box that contains the switch.

Q. That is that circular sleeve between the casing and the mounting flange, is that right?

A. That would be my guess as to what is meant by the sleeve.

Q. And where do you find the bi-metallic operating coil?

A. It is on the right hand side of the flange in the instrument entitled, "Side view," in Exhibit 29.

Q. I show you here this physical specimen of the M-51. Can you point out to the court the mounting flange on that?

A. I assume that it is this item here (indicating).

Q. That is the part that slides up and down on the sleeve, is it not?

A. That is right.

Q. And the sleeve is the part extending from the rear of the casing?

A. This is the sleeve (indicating).

Q. Is that the sleeve?

A. I would assume that that is what is meant by the term "sleeve."

Q. And the bi-metal coil?

A. Is this (indicating).

295 Q. And extends beyond the end of the sleeve?

A. This helican element.

Q. Yes; and is carried by the sleeve; one end is fastened to a rod that extends through the sleeve.

A. Yes, one end is fastened to the sleeve and the other is fastened to a road that extends through the sleeve.

Q. And the only difference between M-51 and the M-61, as stated in this bulletin, is that this sleeve in M-51, this long sleeve, is a shorter sleeve, is that right?

A. Well, comparing these views, I see not only a shorter sleeve, but I see that the flange is mounted for sliding adjustment along the sleeve, whereas in the M-61 it is apparently rigidly mounted on the end of the sleeve. I also see this flange here is arranged to be tilted. It has a mounting so that it may be tilted to various angles, and I do not see that in the view of the M-61 in Exhibit 29.

Q. The view of M-61 does illustrate the sleeve between the box or casing and the thermal element much shorter in proportion to those two elements than in the M-51?

A. Yes, it is a great deal shorter. I would say it is about half as long.

Q. Then the sleeve in the M-61 is about half as long as the sleeve in the M-51 which you have been inspecting,

296 is that right?

A. That would be my judgment, assuming that the casing in this M-51, physical exhibit, is the same size as the casing of the M-61 shown in Exhibit 29.

Q. You have already stated that you have never com

pared the physical M-51 with the physical M-61, have you not?

A. That is right. I never have seen the physical embodiment of the M-61 switch.

Q. Please read the first two paragraphs on the left hand of page 7 of this exhibit relating to the Type M-61 Mercoid Stoker Control.

A. "The Type M-61 Mercoid Stoker Control has many outstanding features. It is sturdily constructed and has the advantage of a simple double adjustment, for both 'high' and 'low' operating temperatures, to meet the variety of conditions encountered in stoker installations. Range adjustable from 50 to 650 F.

"The temperature indicator located over the dial serves the same purpose as a thermometer and will assist at the time of installation is made in determining the proper size of fire required and in correctly setting the controls."

Q. Now, I would like to call your attention to Bulletin No. 240, Plaintiffs' Exhibit 12. There are two side
297 views below a front view of the M-61 shown on the front page of that bulletin, are there not?

A. Yes.

Q. I wish you would please compare the front view and the first side view shown in this Bulletin 240 with the view shown on page 7 of the Bulletin A-14 of the Mercoid Corporation.

A. They appear to be duplicates; that is, the front view and the upper side view in page 1 of Exhibit 12 seems to duplicate the front and side views shown in Exhibit 29.

Q. Now, in this Bulletin 240, dated March, 1933, there is a third side view illustrated above the notation, "Side view. Showing improved flange with stainless steel protecting well over bi-metal coil." Will you please read the printed matter under the heading, "Improved Mounting" just below this illustration of the M-61?

A. Yes, sir. "Improved Mounting".

"We recommend the use of the improved type mounting flange and stainless steel well with sealed end for enclosing the bi-metal coil. This protects the sensitive bi-metal coil not only from deposits of fly ash, but also against corrosive action of the stack gases, so that frequent readjustments are not required to compensate for change
298 in the operation of the bi-metal coil. This new feature can be supplied for instruments now in the field without this protection."

Q. You testified at length yesterday in regard to the construction and operation of the Mercoid Stokatherm control system as described and illustrated in Bulletin 241, dated October, 1935, Plaintiffs' Exhibit 10. I believe you stated that this Mercoid Stokatherm control system infringed or contributed to the infringement of the Cross patent in suit, did you not?

A. Yes, I did.

Q. And it was your opinion that the stoker switch in the TJV Stokatherm was operated at predetermined temperatures by the M-11 Pyratherm, did you not?

A. That is right.

Q. Have you ever read the description of this control?

A. I have.

Q. As set forth on page 1 of this bulletin?

A. I have.

Q. Under the heading, "Fire Maintaining"?

A. I have.

Q. Will you please read it again? Put it in the record.

A. "The Stokatherm System operates the stoker for only the very shortest periods necessary to maintain
299 a minimum fire while the thermostat is in the off position.

"The firing periods are not at definitely timed intervals or governed by fixed stack temperatures, but are automatically regulated to meet the variable conditions encountered on each installation. As domestic stokers operate approximately 80 percent of the heating season the fire maintaining controls, the economical, short operations of the Stokatherm not only result in a very decided fuel saving, but also insure against overheating."

Q. Have you read very carefully the description of the Type M-11 Pyratherm as set forth under that title on page 2 of this bulletin? I believe you have a physical Pyratherm introduced as Plaintiffs' Exhibit 43, which I will place before you. It is this paragraph.

A. Yes, I have it marked, page 3.

Q. Page 3. Will you please read that paragraph?

A. "The M-11 Pyratherm is radically different from conventional stoker stack controls, as it does not operate at predetermined high and low temperature settings, but operates only on a differential or change in temperature.

"On an increase in temperature, the circuit immediately opens, regardless of the temperature existing in the

300 stack at the time. Regardless of how high the temperature may continue to rise, the unique Mercoid ratchet assembly provided permits the bi-metal coil to turn without strain.

"On a decrease in temperature the circuit immediately closes, regardless of the temperature existing in the stack at the time. The ratchet assembly again relieves the bi-metal coil from strain regardless of how low the temperature may go.

"This instrument, operating by means of the ratchet assemply on a differential in temperature, differs from conventional stoker stack controls, in that it remains in perfect adjustment, regardless of changes or 'sets' in the bi-metal coil, due to excessive temperatures or corrosive fuel gases. For this reason, no protecting well is required over the bi-metal coil."

Q. Now, I believe you testified yesterday, and it appears on page 188 of the record, that the M-11 stack switch is connected in the stack and is responsive to the temperatures, and it is connected with the Stokatherm. It functions upon low stack temperatures, as when the fire is about to go out. What is the usual temperature in a furnace that indicates the fire is about to go out?

A. Any falling temperature in the stack is continued—

301 Q. I did not ask you that. I asked you what was the temperature of the fire when the fire was about to go out.

A. Well, it varies in various installations. In the installation shown in Exhibit 37 I believe the record in the other suit will show that 115 degrees Fahrenheit was selected as the temperature for actuating the control.

Q. What is the usual temperature in the stack after a prolonged operation of the coal stoker? Can it be in the neighborhood of 1000 degrees?

A. I would say that 1000 degrees might be had, but only ina very inefficient system. The temperature of perhaps 350 would be more likely be the top temperature in a modern reasonably efficient furnace.

Q. Well, presume or assume that the stoker has been operating for a long time and the stack temperature has risen to the neighborhood of 1000 degrees and the room thermostat is then satisfied and stops the circuit to the stoker motor. What, if any, is the response to the natural drop in stack temperature when the motor ceases to oper-

ate and feed fuel to the furnace, and what is the response of that drop upon the M-11 Pyratherm?

A. Immediately after the room thermostat turns off, the fire is presumably blazing brightly and for a few minutes there is no appreciable change in stack tem-
302 perature, but after those few minutes elapse, the stack temperature commences to drop very rapidly and cools off. The curve of temperature is very steep during those initial periods and for perhaps half an hour or so, and then flattens out and the temperature reduces more closely.

Q. Now, what is the effect upon this M-11 Pyratherm when the room thermosfat opens and the stoker motor stops?

A. After an indeterminate number of minutes, perhaps relatively few minutes, perhaps on the order of five minutes, the M-11 switch will open.

Q. Then there must be a drop from the assumed 1000 degrees temperature before the M-11 will operate?

A. That is right.

Q. How much of a drop in temperature must there be before the M-11 will operate?

A. I do not know definitely. It would depend on the operating characteristics of the M-11, and I would assume it would be perhaps in the neighborhood of 50 degrees Fahrenheit.

Q. Could you predetermine that degree of drop?

A. If you let me have an M-11 Pyratherm and I could test it, I could tell within a degree or so, yes.

Q. You are familiar with the construction, are you not?

A. Yes.

303 Q. Does that have any instrument in there for setting the operation upon any predetermined degree?

A. It has no instrument in there for changing the setting, but by the very construction it is set to operate at a predetermined drop.

Q. Well, now, will you please take that instrument and show the court how it is set to operate upon any predetermined drop?

A. I do not think it is necessary to take the cover off. (Witness removes cover of the Pyratherm for demonstrating to the court.) The operation of this device, your Honor, is that when the temperature goes up, the coil turns in this direction and the switch is in the open posi-

tion. Then when the temperature starts to drop, the Pyratherm—I mean, the thermal element turns in the other direction until after a certain amount of drop. After a certain amount of drop that mercury ball will have to come over and bridge the gap. I am faking it a little bit here by turning it, because I cannot get enough turn to it. It takes quite a lot of turn.

Q. Turn it the other way.

A. I turned it quite far here.

Q. Turn it back.

A. Now it comes back and eventually the switch 304 will turn and cause the mercury to bridge the terminal. Now, there is no adjustment in here, there is no scale by which you can vary the temperature at which the mercury will close the switch, but the constants that are built into the device are such that after you have gone up to the temperature and start to come down, depending on the temperature to which you have gone, the switch will close after a predetermined drop from that high temperature. That is not adjustable. That is built into the switch.

Q. Now, you have used the term "predetermined drop." What do you mean by that?

A. I mean a definite drop.

Q. You mean a drop that can be defined before the instrument is made?

A. Yes; I could prepare a curve if I gave that a proper test under actual conditions and would be able to tell you pretty closely within a few degrees the temperature at which that switch will close, following a drop from any given high temperature.

Q. Then to make a switch which would close upon a predetermined drop it would have to be an especially built switch in each instance, would it not?

A. You can build them in production. I mean the 305 variations of production would not—you can build a thousand switches, all of which will be the same and answer the purpose. I do not like that word "predetermined."

Q. Neither do I, but it is used in the claims.

A. I know.

Q. You mean to say then that this particular switch, the M-11, which I am holding here in my hands, and shown now with the circuit closed, takes a predetermined degree

to tilt it the other way and then to tilt it back the other way?

A. Assuming that it has gone up to a high temperature. Now, when you start to drop the switch mechanism is such that after a drop of,—I do not know what the constants are there,—but assume it is 50 degrees. After it has dropped 50 degrees from that high temperature, that switch closes.

Q. Then you would have to determine the constants in each case to determine at what degree drop it would operate, would you not?

A. And those constants are on the blue prints of Mercoid Company.

Q. Can you produce them?

A. No, I cannot. I assume Mercoid has complete data on their switches.

306 Q. I understood you to say that it would take a drop in temperature from the assumed 1,000 degrees before the Pyratherm would set the timing mechanism in operation, and you stated your could not specify the exact amount of drop, did you not?

A. That is right.

Q. Well, you can state, can you not, whether the temperature at which the M-11 would operate, is a temperature which would indicate whether or not the fire is about to go out?

A. I do not quite understand that question.

Q. Well, in other words, does the temperature in the stack, say at 1,000, have to descend until about that at which the fire would go out before the M-11 operates?

A. No, I would not say that. The M-11 apparently is operating. I say I have assumed a temperature drop of 50. It might be 100 degrees from the high temperature before the M-11 closes. Now, that temperature might be somewhat higher than a temperature indicating that the fire is going to go out immediately, but the point is, that unless the stoker is started on a falling temperature the fire will go out eventually.

Q. Now, the question that I asked you was, and we had assumed that after a long stoker operation the tem-
307 perature in the stack had reached about 1,000 degrees and you stated that upon a drop from 1,000 degrees in temperature—the M-11 would operate the stoker motor.

A. That is from 50 to 100 degrees below 1,000.

Q. 50 to 100 degrees below 1,000?

A. That would be over 900.

Q. Then how do you reconcile that statement with your statement in your testimony yesterday, when you said the M-11 stack switch functions upon low stack temperature as when the fire is about to go out?

A. It functions the stoker motor at the low stack temperature.

Q. It does not say so. It says, "It functions to set in operation a clockwork mechanism." But before you made that statement—I will read you the whole thing.

Mr. Stone: What page is that?

The Court: Give him the page.

Mr. Moore: Page 188.

Q. "The M-11 stack switch is connected in the stack and is responsive to the temperatures, and it is connected with the Stokatherm. It functions upon low stack temperatures, as when the first is about to go out. It functions to set in operation a clockwork mechanism."

Now, you stated there that the M-11 functioned
308 when the fire was about to go out and you stated today that the M-11 would operate in about a 50 degree drop from 1,000 degrees, and I ask you how you reconcile that statement with the statement in your testimony yesterday, that it functioned when the fire was about to go out?

A. The operation of the M-11 switch on the falling temperature from a high degree of heat in the stack sets this clockwork mechanism in operation.

Q. You did not say anything about your clockwork mechanism in that sentence.

A. And that clockwork mechanism then continues to operate for a length of time. Now, during that length of time—

Q. I know all that. I am asking you this sentence here.

A. You asked me to reconcile it.

Q. "It functions upon low stack temperatures, as when the fire is about to go out." We all know that this control is to prevent the fire from going out, but you are talking about the M-11 there.

The Court: You are asking him to make a statement, to reconcile two statements. Let him do it, if he can.

Mr. Moore: All right.

309 The Witness: A. The M-11 switch closes after a drop in temperature from a high degree of temperature.

You have assumed 1000 degrees. I have stated that it is more usual that the high temperature is in the neighborhood of 350 to 400 degrees in the stack. However, it makes little difference. The M-11 switch closes after a certain amount of drop from that high temperature and starts a clockwork mechanism in operation. That clockwork mechanism continues to operate for perhaps a half an hour. During that half an hour period, the temperature in the stack will continue to fall and at the end of a half hour period it will be in the neighborhood of 115 to 125 degrees Fahrenheit. That is the temperature in the stack, and at that time the train of operations started by the closure of the stack switch results in the starting of the stoker motor.

Therefore, the stack switch functions to start the motor at a time when the temperature in the stack indicates that the fire is shortly to go out.

Mr. Moore: Q. Now, will you please read Paragraph 3, the explanation in Bulletin No. 241A, Plaintiffs' Exhibit 10, appearing on the right hand column of page 3 under the title, "Fire Maintaining"?

A. Yes.

310 Q. Will you please read that?

A. "When the Sensatherm opens its circuit due to the room's being at the required temperature, the Mercoid relay 'T' instantly opens its circuit and stops the stoker. The fire now starts dying down and the stack temperature decreases accordingly. As this decrease in stack temperature occurs, the bi-metal coil of the M-11 Pyratherm starts turning and the first movement causes the switch circuit to close. The closing of this circuit energizes a motor M and a solenoid S. The Stokatherm timing motor is now in operation and within the period as set by adjustment B, which we have assumed at 30 minutes, switch F closes its circuit and operates the relay, which, in turn, again starts the stoker."

Q. Will you continue?

A. (Continuing.) "Under no circumstances can the stoker operate in less than 30 minutes after the thermostat shuts off. During this 30-minute delay period, the stack temperature continues to decrease. On the average installation the stack temperature drops several hundred degrees during this first 30-minute period, and the Pyratherm accordingly follows this change. Regardless of how low the temperature may drop, only a slight rise in stack

temperature is necessary to open the Pyratherm cir-
311 cuit."

Q. Well, the 30 minutes determined by the clock-work is the only predetermined time that you can find in this Stokatherm system, is it not?

A. Well, I have said that the constants that are built into the M-11 switch make that switch operate after a temperature drop that can be described as predetermined, even though it is not adjustable.

Q. And you still consider that the M-11 is a control actuated by a predetermined minimum temperature in the combustion space, do you?

A. I consider the M-11 in combination with the Stokatherm TJV to be that kind of a mechanism.

Q. Then you consider the Mercoid TJV and the Pyratherm M-11 must be taken together and installed in the stack to create a heating system control to infringe the Cross patent, do you?

A. The Stokatherm, of course, does not have to be installed in the stack, but the M-11 must be, of course, and in that later form the TJV, the stack element, has been combined in the same unit with the other elements.

Q. Do you mean to state that the M-61, which is similar to this, except it has a shorter stem, and which operates
312 at a predetermined high and low temperature by putting the bi-metallic element in the stack, is the equivalent or the same thing as all of this mechanism in this box?

A. No, I never said that.

Q. And this mechanism here, which is operated by a stem in the same manner as the M-51, that all this mechanism is the equivalent to the M-61, and all this mechanism is an infringement of the Cross patent?

A. Not all of the mechanism. I say that that Stokatherm mechanism contains the elements that are called for by the claim of the Cross patent in the same way that the Stokatherm M-61, when combined with the room thermostat and the other elements for connecting it with the stoker motor infringes.

Q. Now, the claims call for a separate thermostatic control actuated by predetermined minimum temperatures, and you call this whole thing a separate thermostatic control actuated by minimum temperatures, do you?

A. It calls for a separate thermostatic element.

Q. The thermostatic element is on the M-11, is it not?

A. Yes.

Q. And the thermostatic element in M-11 is in no way connected to the box here on the T-IV, is it?

A. It is not in those physical exhibits.

Q. There is an electric wire connecting the switch
313 in the M-11 to the mechanism within the box in the Stokatherm, is there not?

A. That is right.

Q. And yet you say these two instruments, this box and all this—.

A. Not all of it.

Q. (Continuing.) —mechanism in there, and this, this separate instrument with a switch in it and a bimetallic coil, infringes the simple terms of this patent which called for a separate thermostatic control actuated by a predetermined minimum temperature?

A. Yes, I do, because—

Q. And you stated that this part, the M-11, does not actuate at a predetermined minimum temperature, unless it is so made at the factory in accordance with its constants, is that right?

A. Yes, that is right. That has constants as it is built in the factory, and those constants result in the operation of the switch after temperature drop.

Q. What are constants?

A. They are the parts in there, the dimensions, the resilience of the thermal element; all of those factors, covering the operation.

Q. You have to take all those into consideration to
314 make a control which operates at a predetermined minimum temperature, to create a control which would operate at a predetermined minimum temperature, is that right?

A. Not necessarily. You take the parts and put them together and after you have got them together, they operate in a certain way. You operate it once, and you find out what the constants are, and every time you operate it again, you have the same operation within limits, of course.

315 Q. Well, you state that this instrument, the M-11, actuates at a predetermined temperature, do you?

A. It actuates after a temperature drop from the high temperature.

Q. But you cannot determine—

A. There is a lost motion in there.

Q. But you cannot determine how much of a drop is necessary to operate this then, can you?

A. Yes, I can.

Q. Well, please do it.

A. Well, I will have to have a furnace and I will have to have thermometers and I will have to put it in the furnace and measure the temperatures.

Q. Do you mean to say you have never done that?

A. No, I have not done it on that instrument.

Q. Have you ever done it on any of them?

A. Yes, on some instruments; not on any of these, no.

Q. You never have made a demonstration to yourself by hooking up these two instruments and placing the M-11 in a furnace, have you?

A. No, I have not.

Q. Then you are only speaking from what your electrical knowledge would be a basis for?

A. That is right, and reading the literature of The 316 Mercoid Company.

Q. All right. Where do you find in The Mercoid Corporation any literature which says the M-11 actuates at a predetermined temperature?

A. I do not find any in that literature.

Q. In what literature do you find any statement that the M-11 operates at a predetermined temperature?

A. The only literature that I know of describing the M-11 is literature put out by Mercoid Company.

Q. Then it is merely theory on your part that you state that? It is your opinion then that that box with all this mechanism in it and this casing with this switch in it and a thermostatic element operates at a predetermined temperature?

A. I did not say that it operated at a predetermined temperature. I said that the thing operated—the M-11 operated after a certain temperature drop that can be predetermined.

Q. How can it be predetermined?

A. In the manner I have stated it.

Q. By the constants of the construction of the instrument?

A. By testing it out and finding what the constants are. It is a simple matter of physics, to make that

317 kind of a demonstration, if you have the proper equipment.

Q. How long would it take you to make a demonstration of that kind?

A. Given the equipment—

Q. Now, I can give you these instruments.

A. —a couple of days.

Q. You have got the instruments here.

A. A furnace for making high temperature.

Q. I haven't any furnace. We never sell furnaces.

A. Well, you are asking me how long it would take to make that kind of a test.

Q. You made that statement. Now I would like to have proof that your statement is correct.

A. What statement? What statement are you referring to now?

Q. That that instrument could be made to operate at a predetermined temperature.

A. There it is. That operates after a predetermined drop in temperature from a given high.

Q. Well, I have asked you what that temperature was.

A. And I say that I do not know, because I have not tested it.

Q. All right. Then you do not know whether this thing does operate at a predetermined temperature,
318 do you? It is just your opinion?

A. That is right. Everything is my opinion.

Q. And you have no proof to offer that it will, that this mechanism in the box plus the casing and the thermal element will operate as a separate control, as specified in the claim; a separate control, thermostatic control, actuated by predetermined minimum temperatures?

A. Nothing but what my intelligence tells me from reading all these exhibits.

The Court: This would be a good place to take a recess until 2:00 o'clock.

Whereupon a recess was taken until 2:00 o'clock p. m.

319 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company
*vs.*
The Mercoid Corporation.
} Before Igoe, J.

Wednesday, September 10, 1941,
2:00 o'clock p. m.

Met pursuant to recess.

Present:

Messrs. Stone, Bair, Freeman, Moore.

The Court: You may proceed.

JUNIUS F. COOK, JR., a witness called on behalf of the plaintiff Mid-Continent Investment Company, having been heretofore duly sworn, resumed the stand and testified further as follows:

*Cross-Examination (Continued) by Mr. Moore.*

Q. This morning we were referring to the Mercoid Stokatherm control system as described and disclosed
320 in Bulletin No. 241-A, Plaintiffs' Exhibit 10, and we had talked about the operation of the M-11 Pyratherm. Will you please state what occurs or what action is taken by the M-11 Pyratherm when the hold fire switch places the stoker in operation?

A. When the hold fire switch has been closed as the result of the action of the M-11 device, the cam element—

Q. Now, I asked you what happened to the M-11. You are referring now to a Stokatherm box.

A. The M-11 remains closed and maintains the red circuit in operation to keep the cam device which actually trips the hold fire switch in position.

Q. And does it remain in the position all the time that the stoker switch or hold fire switch is closed, or has placed the stoker motor in operation?

A. That is my understanding. The M-11 stays closed as long as the hold fire switch is closed. After the stoker

has operated long enough to build up the fire, the M-11 switch wil open on a rising temperature in the flue and thereby disable the circuit which drives the cam which is holding the hold fire switch closed. The cam is a rotatable element, which then drops of its own weight and permits the hold fire switch to open.

Q. My understanding from what you said, then, in
321 regard to the M-11, is that it remains closed until there is an increase in temperature in the fire box, is that right?

A. That is my understanding of the operation.

Q. Now, will you please read paragraph 3 on page 3 of this exhibit, under the heading of "Fire Maintaining"?

A. I read that this morning.

Q. No, you read 1 and 2, but you did not read 3, I don't believe.

A. The third paragraph under that heading reads:

"If the fire is in good condition, as is normally the case during the first fire maintaining operation after the thermostat shuts off, the stoker operates for only a very short period (usually from 10 to 15 seconds), until the stack temperature rises and opens the Pyratherm circuit, which immediately stops the stoker. As the Pyratherm circuit opens, time motor "M" stops, and as solenoid "S" is deenergized the movement gear train releases and immediately returns to its normal starting position."

Q. At what temperature does the M-11 Pyratherm open the circuit to stop the stoker motor, as described in this paragraph?

A. I don't know for sure, but I would assume that it would open at perhaps 130 to 150 degrees Fahrenheit.

322 Q. Would that be a predetermined temperature?

A. I would be a predictable temperature, after one has examined the instrument to find out what is its operating characteristics.

Q. Then a predetermination of this temperature cannot be set by any dial or anything or any kind of an instrument?

A. It cannot be adjusted, no.

Q. But you have to take into consideration the construction and the constants of the instrument itself before you can predetermine the temperature at which it will operate, is that correct?

A. Not as I understand your statement; it would not have to take in the constants of the instruments, except

insofar as those constants would enter into the actual operation of the device and you could determine the actual operation of the device simply by measuring the temperatures at which it actually operates.

Q. Will you now read the fifth paragraph, following the one you just read?

A. The fifth paragraph?

Q. Yes. Wait a minute. The fourth paragraph. It is the one following the one you just read, the fourth paragraph.

323 A. The fourth paragraph says:

"As the stoker is now not operating, the stack temperature starts decreasing and the M-11 Pyratherm accordingly again closes its circuit. This causes the Stoka therm mechanims to start operating and another test of the condition of the fire will again be made when another thirty minute delay period has elapsed. During this thirty minute period, the fire continues to die down and the stack temperature lowers accordingly. As soon as the Stokatherm starts the stoker, the M-11 Pyratherm performs its most important function in maintaining a low and even fire bed. The condition of the stoker fire is accurately indicated by the rate at which the stack temperature rises as the stoker blower starts operating. If a fast burning coal has been employed the fire may now be very low. Regardless of the condition of the fire, the M-11 Pyratherm permits the stoker to operate only until there is a response from the fire as is indicated by the rise in stack temperature. If the fire is in good condition, the period of operation will be very short, ten or twenty seconds, but should the fire be low the period of operation is increased accordingly until the fire responds and the stack temperature rises."

324 Q. Now, can you tell at what temperature the M-11 Pyratherm again closes the circuit, as described in that paragraph?

A. I cannot tell you to any exact temperature, no.

Q. And can that temperature be predetermined?

A. It could be predicted, as I have said, if one knows the operating characteristics of the particular device.

Q. But there is no indicator or apparatus in the M-11 which will set the instrument to operate at a predetermined temperature, is there?

A. That is right. I answered that question a while back.

Q. Now, will you please read the following two paragraphs under this section?

A. The following two paragraphs read:

"The M-11 Pyratherm continues periodically to check the condition of the fire as above outlined, until the fire reaches the lowest point at which combustion can be sustained. Operation at this low point now continues with the stoker using a minimum amount of fuel, until the thermostat again calls for heat. This system is so sensitive while maintaining a minimum fire, that it automatically compensates even for changes in basement air temperature or boiler water temperature. The stack temperature may fluctuate considerably during such changes, but only sufficient fuel is fed to maintain a minimum fire.

"The firing periods are not at definitely timed intervals or at fixed stack temperatures, as this control system automatically regulates the firing periods to meet the variable conditions encountered on each installation. The stoker operates for only the very shortest periods necessary to maintain the fire during the time the thermostat is in the off position. This not only results in a very decided saving of fuel, but also insures against overheating. The feature of automatically compensating for the variables encountered on each installation eliminates unnecessary servicing. If a new supply of fuel delivered to the stoker has a faster or slower burning rate than that previously used, the Stokatherm system, being directly responsive to the condition of the fire, automatically varies the amount of fuel supplied accordingly. This eliminates servicing due to overheating or out-fire."

Q. Do you still consider that a Mercoid Stokatherm control system is a separate thermostatic control actuated by a predetermined minimum temperature? By this, I do not mean upon a predetermined drop in temperature. The claim does not say anything about predetermined drop in temperature as you have used it, but it does say a predetermined minimum temperature.

A. Yes, I do.

Q. In view of the statements that you have just read?

A. Yes, I think they support that view.

Q. In your testimony yesterday, you stated that the Mercoid Stokatherm JMV operated in a predetermined minimum temperature as covered by Claim 1 of the patent, didn't you?

A. Yes.

Q. Now, referring to the Mercoid Stokatherm Type JMV Bulletin 242, Plaintiffs' Exhibit 19, and to the physical instrument marked Plaintiffs' Exhibit 44, will you please read on page 1 of Bulletin 242 the statement appearing under the heading, "Fire Maintaining"?

A. This reads: "The Type JMV Stokatherm operates the stoker for only the very shortest periods necessary to maintain a minimum fire while the thermostat is in the off position."

Q. Now, please read the statement under "Limits Overheating."

A. That reads: "The firing periods, being directly responsive to combustion conditions, are not at definitely
327 timed intervals or governed by fixed stack temperatures, but are automatically regulated to meet the variable conditions encountered on each installation."

Q. Now, are you in agreement with the statement that the firing periods are not at definitely timed intervals and that the firing periods are not governed by fixed stack temperatures?

A. No, I am not entirely in agreement with that statement.

Q. You would not say this statement was entirely erroneous, though, would you?

A. No, I would not say it is entirely erroneous. I say I do not entirely agree with it.

Q. You did not agree with me this morning in regard to the Mercoid Stokatherm control system, and I don't suppose you will agree with me if I ask you the same questions in regard to the Mercoid Stokatherm JMV?

A. No, I think this JMV is even more clearly an infringement of the patent than the type TJV.

Q. If you think that is a fact, will you please explain where you find a separate thermostatic control actuated by predetermined minimum temperatures in this instrument, which is Exhibit 44?

A. It is the out fire switch. Pardon me, not the out
328 fire switch. The hold fire switch. It is this little switch here, the hold fire switch.

Q. What operates that hold fire switch?

A. It is a cam driven by a clock mechanism, which in turn is driven by an electric motor and the cam is at intervals clutched to the clock mechanism by the operation of the thermal element in the stack. The thermal element in

the stack in turning permits a little latch device to fall and engage a gear, and thus connect the quadrant cam element to the clock mechanism, and the movement of that quadrant cam eventually engages a prong on the frame which carries the hold fire switch and causes it to operate.

Q. Now, is that thermal element connected to directly operate a switch in any way?

A. No. It operates the switch indirectly through the cam and the mechanism for driving the cam.

Q. And what do you say predetermines the temperature?

A. The thing that predetermines the temperature at which this switch closes is the temperature at which the cam—I mean the clutch—is permitted to fall by the operation of the thermal element to engage the clock mechanism, so that after thirty minutes delay—thirty minutes is claimed in the literature—the switch will close, the 329 hold fire switch will close, and that hold fire switch will close at a rather definite stack temperature.

Q. Now, can you step down there and explain to the court just what this fire switch with the expansion and contraction of this thermal element does? What is the first thing that it does?

(The witness here left the witness stand and placing the instrument on the court's bench, made the following explanation:)

A. The first thing that happens that if your Honor will look you will see a little framework here, represented in that tilting frame. That is held in an up position when the temperature in the stack is high. As the temperature falls the disk turns and it has a shoulder which lets the clutch frame—I call it a clutch frame—drop, and that clutch frame has a tooth, as you see here. That tooth engages a gear wheel, and when that—it should be kept in mind that this clock is running, this motor is running, and the clock is running. When the clutch is permitted to drop down and engage the gear, the operation of the clockwork will cause the quadrant-shaped element in here, which I call the cam—perhaps if I push it along; you will see what the clock does. It gradually advances that cam element 330 until it hits the prong there, that prong there. It throws this hold fire switch to this position, releasing the circuit and starting the stoker motor in operation.

Q. Then the first action of expanding or contracting your thermal element is to connect up your synchronous

motor, which is a motor like an electric clock, with the clock mechanism, is it not?

A. No, the motor is continuously running and it drives the clock mechanism. The operation of the thermal element is to connect the clock mechanism with the cam.

Q. It is the clock mechanism, then, that operates the hold fire switch, is it not?

A. It is a part of the driving connection between the thermal element and the switch which results in the closuse of the switch.

Q. The expansion and contraction of the thermal element alone does not open and close the switch?

A. No.

Q. A clock mechanism has to be interposed between them?

A. The expansion of the thermal element sets in motion a train of apparatus which results in a closing of the switch.

(The witness then returned to the stand.)

Q. And then you contend that this complicated 331 piece of mechanism here, including a synchronous clock motor, which is running all the time, and a clock mechanism and a train of gears, all of which must be interposed between the thermal element and the hold fire switch, responds to a separate thermostatic control actuated by predetermined minimum temperatures, do you?

A. I do, because the clock mechanism and that other driving mechanism is simply an equivalent substitution for the connection between the thermal element and the switch in the infringing device of Exhibit 37. It does, by means of a more complicated mechanism, what is done more directly in the device of Exhibit 37.

Q. And you contend that this Exhibit 44 JMV, with its complicated mechanism, of which the thermal element forms a part of the base supporting all this mechanism, and the Mercoid Stokatherm system, including this M-II Pyratherm with the thermal element on it and a switch within the casing, which is responsive to changes in temperature when wired up in connection with this box of mechanism containing another clock mechanism and a solenoid and some more switches,—those two instruments you still contend are met by the claim which reads "a separate thermostatic control actuated by a predetermined minimum temperature in the combustion space," do you?

332 A. I do, because each of those installations, the TJV and the JMV, includes all of the essential elements of the patented invention held to be an infringement in the other suit as exemplified in Exhibit 37, and the similarities are shown in Exhibit 46.

Q. I ask you to read on page 2 of the Mercoid Stokatherm Bulletin No. 242, Plaintiffs' Exhibit 19, the statement appearing under, "Temperature Actuated Mechanism."

A. It reads: The temperature actuated mechanism responds to changes in stack temperature and, by means of a mechanical interlock, controls the starting of the timer interval period. After this period has elapsed, the stoker starts operating to maintain the fire and the length of operation is governed also by the temperature actuated mechanism.

"The temperature actuated—"

Do you want me to continue?

Q. Yes, please.

A. "The temperature actuated mechanism 'J' of the Type JMV Stokatherm is radically different from conventional stoker stack controls. It does not operate at predetermined high and low temperature settings, but operates only on a differential or change in temperature.

333 Operating by means of a unique ratchet assembly on a differential in temperature, this instrument differs from conventional stoker stack controls, in that it continually readjusts itself, regardless of changes or 'sets' in the bimetal coil, due to excessive temperatures or corrosive flue gases."

Q. Mr. Cook, I believe you have already testified that you are familiar with this Cross patent in suit, and you have read the patent and specification and you understand them. I call your attention to the sentence beginning on line 22, page 2 of the patent, which reads as follows:

"To prevent the fire from being entirely extinguished during the periods when the system is shut off for any considerable length of time, a thermo-couple 38, shown in Figs. 1 and 2, is positioned in the combustion space of the furnace, just above the fire zone."

You have also testified that you are an electrical engineer. Will you please give me the accepted definition by electrical engineers of the term "thermo-couple"?

A. Thermo-couple is, according to my understanding,

a type of thermal responsive electrical device which will set up a current as a result of changes in temperature.

Q. Does not that comprise, too, metals of different conductivity and when a circuit is set up it is a very low circuit?

A. Yes, I believe that is correct. A thermo-couple has the ability to respond to changes in temperature and this ability to respond is used for control purposes.

Q. That sentence that I just read continues:

"and this thermo-couple is set at a predetermined temperature."

How can you set a thermo-couple, as you have defined it, at a predetermined temperature?

A. That probably is done by adjusting the circuit in order to make a responsive device operate at a desired temperature.

Q. Do you think that can be done, or have you ever seen it done in a thermo-couple?

A. I would not say that it cannot be done.

Q. You have never seen it done?

A. I cannot say definitely that I have.

Q. Have you ever seen a thermo-couple?

A. Yes.

Q. The specification also states in the sentence beginning in line 32, page 2:

"The variations in temperature acting upon the thermo-couple function a diaphragm valve."

How could a thermo-couple function a diaphragm valve?

A. Apparently the term "thermo-couple" is used to designate an element other than the type of thermo-couple that we have just been talking about.

Q. Do you find a diaphragm valve 29 illustrated as a valve in the drawing?

Mr. Bair: Isn't that a misprint for 39?

Mr. Moore: I think it is.

The Witness: 29 I don't find. 29 is the motor.

Mr. Moore: It must be 39, then.

The Witness: 39. The diaphragm device shown in Fig. 2.

Mr. Moore: Q. Mr. Cook, besides being a patent expert, you are a brother patent attorney and a junior member of the firm representing the plaintiff herein, and I presume you are fully acquainted with what might be

called standard practice or patent law, that the claims of a patent are to be interpreted by the specification and the disclosure on the drawings, are you not?

A. My understanding is that the specification is used to some degree as the dictionary, if you please, for showing what is meant by the terms of the claims. It is not my understanding that the claims are limited by the specification, however.

336 Q. But the claims are to be interpreted by the disclosure in the patent, because you write your specification first, before you write your claims, don't you?

A. The patent law requires the inventor to explain in specific detail how he may perform his invention. He does that in the specification so that people may be advised of a practical way of embodying his ideas in practicing the invention, but it is not my understanding that the inventor is necessarily limited to the specific disclosure or the specific language in the specification.

Q. But the language in the specification must be such that the ordinary man can read the specification, look at the drawings, and understand what the drawings are about, he may or may not understand the claims, but it should have a sufficient disclosure in the patent to explain the claims, should it not?

A. The disclosure of a patent is supposed to teach any person skilled in the art how to make a device that will embody the invention, that is to say, one form of device that will infringe the claims.

Q. I think you have qualified as being one skilled in this art; have you not?

A. I do not know. I have qualified as a patent expert.

Q. Well, as a patent expert, and as you have just
337 described your understanding of the term "thermo-couple," would you understand from the description in this patent, of that thermo-couple being set to respond to variations in temperature and a thermo-couple to operate a diaphragm valve, would you understand that a thing like that can be readable upon the heart of this invention, as it was called by Mr. Cross, the M-61?

A. That diaphragm valve is simply a means for enabling the thermal responsive element to actuate a switch.

Mr. Moore: Will you please repeat my question, Mr. Reporter?

(Mr. Moore's question was read as above recorded.):

Mr. Moore: Q. Now, please answer the question, without any deviation.

A. Yes, I believe that any person understanding electrical matters reading the word "thermo-couple" in combination with the drawings, would realize that the thermo-couple definition which I gave to you and which is a definition of a thermo couple does not describe the particular type of thermal device shown in the patent, which is more in the nature of an expansion thermometer capable of actuating a diaphragm. Therefore, I assume that whoever prepared the patent specification used that term
238 "thermo-couple" in a very general, broad fashion to mean a thermal responsive element, or a thermometer.

Q. Now, is it not a fact that the illustration of this alleged thermo couple in Fig. 2 does resemble, more than anything else, a limit control operated by a diaphragm, which in turn is responsive to the expansion and contraction of a volatile liquid within that tube? Have you ever seen any of those?

A. Yes, I have. Yes, that resembles that type of thermal responsive device.

Q. What is your definition of a diaphragm valve as used here in the specification?

A. He apparently meant a diaphragm device.

Mr. Moore: Cross-examination closed.

Mr. Stone: This will be very short, your Honor.

*Redirect Examination by Mr. Stone.*

Q. Mr. Cook, in the infringing installation in Plaintiffs' Exhibit 37, what sets in operation the means for closing the hold fire switch, which starts the stoker motor?

A. It is the thermal element that is disposed in the stack, the helical coil device.

239 Q. In this same installation, after the hold fire operation has gone on sufficiently long to build up a fire so that it will last a half hour or so, what is it that sets in operation the means for opening the hold fire switch to stop the stoker motor?

A. It is that same helical thermal element in the stack.

Q. Now, Mr. Cook, in the TJV Stokatherm and M-11 system, what is it that sets in operation the means for closing the hold fire switch, which in turn starts the stoker?

A. That is the helical thermal element forming a part of the M-11 assembly, which helical element is disposed in the stack.

Q. And when the hold fire operation has gone on sufficiently long to rebuild your fire so that it won't go out for a half hour or an hour, what is it that opens the hold fire switch so that the stoker will stop?

A. The helical element of the M-11 assembly is the element which starts in operation a chain of circumstances that results in the opening of the hold fire switch.

Q. Now, Mr. Cook, in a furnace installation utilizing the JMV Plaintiffs' Exhibit 45, what sets in operation the means for closing the hold fire switch which starts the motor?

340 A. It is the helical thermal element that forms a part of the JMV assembly, which helical element is disposed in the stack.

Q. After the hold fire operation has continued sufficiently long to build the fire to a point so that it will not go out for a half hour or an hour, what sets in operation the means for opening the hold fire switch for stopping the stoker motor?

A. It is the same helical element, which is disposed in the stack.

Mr. Stone: That is all.

Mr. Moore: I would like to ask the witness just one or two questions.

*Recross Examination by Mr. Moore.*

Q. You were asked what is it that causes the various operations and you replied it was the helical element that starts these operations. Now, is it not a matter of fact that it is the changes in temperature in the stack that starts and stops these operations?

A. Well, that is true also; the changes in temperature in the stack is what causes the helical element in each case to operate or to move in order to start this chain of 341 operations.

Q. And the changes in temperature in the stack of a furnace are what operate every safety stack control or other control employing a thermal element placed in the stack, too, isn't that true?

A. Yes, I would say that is true.

Mr. Moore: Thank you. Recross examination closed.

Mr. Stone: The plaintiff Mid-Continent Investment Company rests.

Mr. Moore: The defendant is ready to present its case, your Honor. I would like about five minutes recess to set up my exhibits.

The Court: You may have ten, if you want them.

Mr. Moore: All right.

(A short recess was here had, after which the proceedings were resumed as follows:)

342 Mr. Moore: May it please your Honor, the first witness that will be called on behalf of the defendant is Albert N. Schultz, but before he takes the stand I would like to call to the court's attention that in accordance with the agreement between Mid-Continent Investment Company and The Mercoid Corporation, to avoid the necessity of taking depositions, the order of this court entered March 8, 1941, includes a finding of fact that the Will-Burt stoker and Mercoid Sensatherm, Mercoid M-51 furnace control, Mercoid M-61 stack control and Mercoid V-2 relay were purchased by E. O. Smith from the Galena Machine and Electric Company of Galena, Kansas, who in turn purchased the Will-Burt stoker and said Mercoid controls from the Will-Burt Company of Orville, Ohio, and that Walter M. Cross, Jr., interviewed F. W. Speck of the Galena Machine and Electric Company, its president, and E. O. Smith as to this installation prior to bringing the suit identified in paragraph 7 of the complaint, it being expressly understood that these findings of fact do not constitute a finding that these facts are or are not pertinent to the case at bar.

The defendant in its answer to the charge of contributory infringement averred that the devices capable
343 of and intended for use in heating systems manufactured by the defendant and which are alleged to infringe and contribute to the infringement of the Cross letters patent 1,758,146 are made and sold by the defendant under a license and in accordance with the disclosures and claims of letters patent granted to Ira E. McCabe, and the defendant further avers that these Mercoid devices capable of and intended for use in heating systems were on the market and offered for sale for a long period prior to the filing date of the application of said letters patent No.

1,758,146; and in its counter claim the Mercoid Corporation averred that the products or articles for use in heating systems of the type described and claimed in the said Cross patent 1,758,146 are not the invention of Walter W. Cross and that said products or articles as sold by the defendant were sold in interstate commerce by the Federal Gauge Company, predecessor in business of the defendant, for more than fifteen years past.

Mr. Schultz will testify to the fact that the Mercoid controls of the predecessor of The Mercoid Corporation had been on the market for more than fifteen years last past. He will testify the manner in which these controls were employed in heating systems, the manner in which
344 these controls were sold to the trade and the manner in which these Mercoid controls were illustrated and described in catalogs, bulletins and instruction sheets.

Mr. Schultz, will you take the stand?

ALBERT N. SCHULTZ, called as a witness by the defendant The Mercoid Corporation, being first duly sworn, testified as follows:

*Direct Examination by Mr. Moore.*

Q. Will you please state your name, age, residence and occupation?

A. Name, Albert N. Schultz; age 39; residence 909 Courtland Avenue, Park Ridge, Illinois; occupation, electrical engineer.

Mr. Freeman: Mr. Moore, as long as you have outlined what this witness is going to testify to, is it my understanding that this witness is not going to testify to anything directed against the Minneapolis-Honeywell Company? If so, we do not have to follow it quite so closely.

Mr. Moore: No, this witness is not going to testify
345 to anything against the unwilling plaintiff, Minneapolis-Honeywell Company.

Mr. Freeman: Thank you.

Mr. Moore: Q. Do you have a degree from a university in electrical engineering and, if so, from what university and what year?

A. Yes. I have the degree of E. E. received from Lehigh University in Bethlehem, Pennsylvania, in 1924. That is the degree of electrical engineer.

Q. What employment did you first secure after leaving the university?

A. I was first employed as system operator of the Pennsylvania Edison Company at Easton, Pennsylvania.

Q. What was your next employment?

A. I was next employment by the Federal Gauge Company in New York City.

Q. On what date did you enter the employ of the Federal Gauge Company in New York City?

A. I became employed with the Federal Gauge Company on May 18, 1925.

Q. How long were you employed by the Federal Gauge Company?

A. I am, in effect, still employed by that company. However, about 1928 the Federal Gauge Company changed its operating name to The Mercoid Corporation, which
346 is the company with which I am now employed.

Q. Then you have been employed by The Mercoid Corporation and its predecessor in business for more than the last fifteen years, is that correct?

A. Yes, that is correct.

Q. What were your duties when you first entered the employ of the Federal Gauge Company?

A. My primary duties were in charge of engineering in the eastern part of the country. However, those duties were combined with sales activities.

Q. What are your present duties with The Mercoid Corporation?

A. They are substantially the same. That is primarily engineering in connection with sales. However, there have been other duties added, such as preparation of company catalogs and literature.

Q. Are you still employed in the New York office?

A. No. At the present time I am employed in the Chicago office.

Q. Do you remember when you were transferred to the Chicago office?

A. Yes. I was transferred from the New York office of the company to the Chicago office on October 1, 1930.

Q. What is your present title, if any, with The
347 Mercoid Corporation?

A. At present I am vice president of the company in charge of engineering.

Q. Did you take on any additional duties when you came to the Chicago office in 1930?

A. The additional duties that I took on in 1930 were primarily the preparation of company literature and instruction bulletins.

Q. Are you familiar with the mechanical drawings illustrating the application of the Mercoid controls and the wiring diagrams shown in those catalogs and bulletins?

A. Yes, I am.

Q. Have you ever had occasion to read any United States letters patent?

A. Yes, I have.

Q. Do you understand them?

A. Those patents which I have read.

Q. Do you understand the drawings of the patents?

A. Of those patents which I have read I have understood the drawings.

Q. And you understand the specification of the patents?

A. Yes, I do.

Q. What was the business of the Federal Gauge Company when you first entered its employ more than
348 fifteen years ago?

A. The business of that company was primarily manufacturing and selling Mercoid automatic controls. However, they also at that time were selling Federal warranted gauges for pressure and vacuum regulation.

Q. What were these Mercoid automatic controls that you refer to?

A. They were electric control units, the purpose being to open and close an electric circuit on changing the pressure, vacuum, temperature or fluid level, and they also had numerous industrial applications.

Q. Did they have any domestic applications?

A. Yes. The main field of application of these controlling units was in connection with automatic heating systems, also in connection with automatic refrigeration, as well as many industrial applications.

Q. Were there many oil burners on the market in 1925?

A. Yes. In 1925 the oil burner industry was having a phenomonal growth. There were manufacturers of oil burners at that time springing up all over the country.

Q. Were there any coal stokers on the market in 1925?

A. In the eastern part of the country where I am located there were at that time, as I now recall, only two
349 automatic coal stokers, the Iron Fireman and the Motor Stoker.

Q. What were the names of some of these auto-

matic controls sold by the Federal Gauge to the heating industry?

A. Well, generally they were classified as room thermostats, pressure or temperature limit controls, which were units for limiting the pressure of a steam boiler or the temperature of a hot water boiler or the air temperature of a warm air furnace. Then, in addition there were what we call primary controls for oil burners, which were control units to regulate the ignition of the burner and at the same time provided a means for stopping the burner in the event of ignition or flame failure.

Q. In what manner did the Federal Gauge Company sell these room thermostats and limit controls and other devices that you have just spoken of?

A. The sales efforts of the Federal Gauge Company were devoted entirely to contacts with manufacturers and with the dealers handling the various types of automatic heating equipment.

Q. Did you ever solicit the individual users while you were in the New York office, that you know of?

A. No, we never solicited business from individual users.

Q. Has The Mercoid Corporation or the Federal
350 Gauge Company ever solicited the individual house owner, to your knowledge?

A. Never to my knowledge.

Q. Are you thoroughly familiar with the construction and operation of the room thermostats, pressure controls and furnace controls that the Federal Gauge Company were selling when you first entered its employ more than fifteen years ago?

A. Yes, I am.

Q. Did the Federal Gauge Company when you first entered its employ put out advertising matter in the form of catalogs, bulletins and the like which illustrate the room thermostats, boiler controls and furnace controls?

A. There were no complete catalogs available. However, there were individual sales bulletins.

Q. I show you here a piece of literature put out by the Federal Gauge Company, entitled "Mercoid Bulletin F. 1," dated March, 1925, and ask you if you have any recollection that this bulletin was on the market when you first entered the employ of the Federal Gauge Company?

A. Yes, that bulletin was in current use when I entered the employ of the Federal Gauge Company.

Q. What is that figure 21 that is illustrated on the front page?

351 A. It is a room heating type thermostat.

Q. How did this operate?

A. That instrument was made up essentially of four parts.

There is a phantom cover shown on the instrument, which was a metal cover and was perforated with holes, so that the air from the room could circulate to the mechanism which is located underneath the cover. Now, under the cover and at the bottom of the instrument is a bellows element that is filled with a volatile liquid. The characteristic of a bellows filled with a volatile liquid once subjected to air temperature changes is to increase its internal pressure as the temperature rises.

Directly above the bellows is shown a hermetically sealed Mercoid switch, which is the means for opening and closing the electric circuit by means of mercury. I have here a sample of that switch, and you can see the mercury and two contacts on one end. As it is tipped into one position, those two contacts are closed; as it is tipped to the other position the mercury flows away, opening the circuit. These two contacts would be connected by means of electric wires to a circuit controlling the motor or other electrical equipment which the thermostat is handling.

352 Now, at the very bottom of this instrument, shown as a figure 21 thermostat, there is a calibrated dial and an adjustable pointer, which can be moved over that calibrated dial and set for any predetermined temperature that might be desired within the instrument's adjustable range.

The standard range of a room thermostat was 56 to 80 degrees Fahrenheit and it was normal in most heater applications to adjust the instrument to regulate the temperature at approximately 70 degrees Fahrenheit.

Now, as the temperature of the room would rise and the air would pass through the perforated cover and affect the bellows, it in turn would, when the temperature reached 70 degrees and with the temperature indicater set at 70 degrees, open the electric circuit.

On a small drop in temperature below that point the circuit would again close, due to the decrease of pressure created within the volatile liquid filled bellows.

Q. Those thermostats are usually known as room thermostats, are they not?

A. Yes, that is correct.

Q. What is the instrument illustrated at the top 353 of page 2 of this bulletin of March, 1925?

A. At the top of page 2 of that bulletin is illustrated the figure 31, Mercoid pressure type boiler control.

Q. Can you produce an instrument similar to figure 31 pressure control that was on the market in 1925?

A. Yes, I can. (Witness produces instrument.) This is the figure 31 type of control.

Q. I call your attention to the name plate on the instrument. Does that name plate give any patent numbers?

A. Yes, this name plate shows six patent numbers.

Q. Do you know to what they refer?

A. Most of those patent numbers apply to the Mercoid switch itself and also to the snap action movement employed in this type of control.

Q. If you had before you an enlarged copy of the Patent Office drawing of this control would you be able to explain its operation to the court better than from the instrument itself?

A. Yes, I believe I could.

Q. I show you here an enlarged photostat of the I. E. McCabe patent No. 1,734,016, granted October 29, 1929, upon an application filed September 1, 1922. I ask you, do you find that No. 1,734,016 upon the name plate of that instrument?

354 A. Yes, that number is present.

Q. Will you step down and take a pointer and explain very briefly to the court how this figure 31 Mercoid pressure control operates?

A. Just briefly describing this control, I would say that it is made up of four major parts.

First, there is a metal protecting case around the instrument, the purpose being to protect the internal mechanism and at the same time to provide a means for making electrical connections to the control units.

Inside of the control case there is a Bourdon tube, which is shown on the inside periphery and which is designated as No. 2.

Third, there is a snap action mechanism, which is shown as No. 11, and in greater detail in figure 2 and figure 3.

Fourth, there is a hermetically sealed mercury contact switch, which is designated as No. 25.

Now, the Bourdon tube, which I mentioned as part No. 2, is a metal tube that is hollow on the inside, and, due to the fact that it is formed in a partial curve, when a pressure enters the inside of that tubing, also due to the fact that the tubing is permanently sealed at one end, to increase your pressure within the tubing ends to open up the
355 tubing and, further, since the one end of the Bourdon tubing is connected to the bottom piece which is shown directly at the bottom of figure 1 and which has a hollow opening through which pressure can enter into the Bourdon tube, when a pressure increase occurs the end of the Bourdon tube to which connecting bar 13 is attached tends to move toward the outer metal case.

Now, there is in addition to the movement a certain amount of power, depending upon the pressure, within the Bourdon tube. That power pulls the connecting bar 13, and in so doing actuates the snap action mechanism which is shown in figure 2 and figure 3.

These mechanisms have adjustable means for setting the pressure at which the instrument will snap the Mercoid switch from the one position to the other position, wherein the circuit would be opened and closed.

As the pressure, therefore, enters the Bourdon tube and reaches the corresponding pressure for which the mechanism is set, the Mercoid switch snaps to either open or close the electric circuit.

Q. What was the date that application was filed?

A. That was filed on September 1, 1922.

Q. And who was the attorney in the case?

356 A. The attorney was Langdon Moore.

Mr. Stone: Mr. Moore, I think you ought to start to number the exhibits for us, so we can mark them.

Mr. Moore: I will introduce them.

Would the court like to see that switch?

The Court: Yes.

Mr. Stone: Mr. Moore, I have no objection to your putting in anything that you think is going to help us on the issues of this case, but I do think that it should be directed to the issues in the case.

I make no contention here that Federal Gauge was not making switches back twenty years ago, and I think it should be pointed out here just how these switches are pertinent to the issues raised in this complaint.

We are relying entirely upon our decision in the Missouri court for an adjudication on validity and upon direct in-

fringement, and it seems to me that while it is undoubtedly true that the Mercoid Corporation has been making switches such as this sort, who can possibly deny it?

Mr. Moore: Well, do you want to admit that the Mercoid Corporation and Federal Gauge for twenty years have been making pressure and temperature responsive electric
357 switches which could be placed in the stack or in the hot water or in the furnace, which would operate at a predetermined temperature to open and close an electric switch, to start a motor?

Mr. Stone: No, I would not make such a broad admission as that.

Mr. Moore: Then, your Honor, I think I have a right to show the history of the Mercoid Corporation and the Federal Gauge and the manner of the switches which they manufactured, with respect to pressure and temperature changes causing a motor to operate.

The Court: As I understand it, the whole system was infringed in the Smith case.

Mr. Moore: Yes, your Honor, it was the entire system in the Smith home that infringed the patent. The Mercoid controls did not infringe the patent.

Mr. Stone: The suit in Kansas City found that a system such as—

The Court: I understand, it found the system violated your patent.

Mr. Stone: And it also found that that suit was defended in its entirety by the present defending corporation.

The Court: Yes.

358 Mr. Stone: And according to the holding in Universal *vs.* Dougherty, which is also an infringement case in our own Circuit Court of Appeals, one who defends a direct infringer and who assumes the full responsibility of the suit is bound by all of the issues there raised or which could have been raised.

Now, in that lawsuit there was raised the question of validity of the Cross patent, and that was relied upon, and I think the fact that—

The Court: That is not disputed here.

Mr. Stone: That is not disputed here, no.

The Court: I don't understand how you can find The Mercoid Corporation guilty of infringement in that suit.

Mr. Stone: The controls made by The Mercoid Cor-

poration, it was found there that they were infringements when they were put in that installation.

The Court: And your lawsuit ran against a man named Smith.

Mr. Stone: Yes.

The Court: And he was found guilty of infringing your patent. I do not understand how I can restrain The Mercoid Company from making certain elements that go into one of those systems.

Mr. Stone: Because, your Honor—

359 The Court: You stated here a while ago that it did not, that the element outside of the system was not a violation of your patent.

Mr. Stone: The element of which we are talking, in so far as these elements are new, created by the Mercoid Corporation to satisfy the demands of our patent, they are actually actively going out here and satisfying a demand which we created.

The Court: Where do you find anything to that effect? In other words, your position as I understand it and as you state it now is that up to the time you got yours established, that anything they had patented that might be used in your system, it is all right to go ahead and use it.

Mr. Stone: Yes.

The Court: But thereafter they must not and dare not make any improvement in any of those elements. That just can't be the law.

Mr. Stone: Now, let us make sure of that. Let me state our position there, your Honor.

My position is that thereafter they cannot take a control which—I don't care whether it existed before or not, but make a control specifically to meet a specific demand created by our invention, to go out and tell the trade how 360 to do it and take it and use it, without being a contributory infringer. That is the basis of the law.

The Court: Do I understand you can prove that kind of a lawsuit here?

Mr. Stone: In the answers and interrogatories which I read here before it said: How does the M-61 control which is in that stack differ from any control ever made by The Mercoid Corporation before, and they gave six differences.

Mr. Moore: May it please your Honor, they have not produced an M-61 control. Nobody knows what it looks like. The court does not know what it looks like. What they are trying to do is to make—

The Court: What is before the court now?

Mr. Stone: The only matter that I am raising now is that we are going into a long line of controls that The Mercoid Corporation made prior thereto, and I do not see that it is pertinent.

The Court: He has also called upon you to make an admission and you refuse to make it. Your objection is overruled. Proceed.

Mr. Moore: What was the last question?

(The question was read as above recorded.)

361 Mr. Moore: Q. Mr. Schultz, I now call your attention to the two instruments illustrated on each side of the bottom of page 2 of this Mercoid bulletin E-1 of 1925 and ask you to tell me what they are.

A. On the left side is shown the figure 36, Mercoid straight stem temperature control. On the right side is the figure 37 back angle stem temperature control.

Q. Now, can you produce one of these straight steam temperature immersion controls?

A. Yes, I can.

Q. And that is a representation of the illustration shown here?

A. That is right.

Q. Are there any patent numbers on that control?

A. Yes, this control figure 36 shows two patent numbers.

Q. Does patent No. 1,734,016 appear thereon?

A. Yes, it does.

Q. Now, have you got a specimen of the back angle temperature type?

A. Yes, I have.

Q. That is the physical instrument represented in this illustration, is it?

A. Yes, sir, it is.

Q. Are there any patent numbers upon that?

362 A. Yes, there are three patent numbers shown here.

Q. Does patent No. 1,734,016 appear thereon?

A. Yes, it does.

Q. Then both of these instruments illustrated as the straight stem temperature and back angle stem temperature type bear the patent number of this McCabe that you have explained to the court, is that correct?

A. Yes, that is correct.

Q. Is there any difference in the operation or the actual construction of the boiler controls of the immersion type from the pressure type?

A. There is one important difference in this type of control. In the first place, the body of the control, the internal mechanism, including the Bourdon tube and Mercoid switch, are the same as they were in the figure 31 pressure type control which I previously explained. However, the important difference is that instead of this instrument being operated by having pressure from a steam boiler or pressure chamber go directly into the Bourdon tube, there is attached to the bottom piece of the control a bulb of cooper in which there is a volatile liquid, and as temperature changes occur around this copper bulb the volatile liquid within the bulb creates a pressure on a rising temperature, which in turn affects the pressure
363 mechanism of the control body. Now, when this control is installed in a hot water boiler so that the bulb is immersed in the water, then as the water temperature rises the change of temperature is created into a change of pressure, and by having the instrument properly adjusted, that is, having the mechanism properly set, the instrument will then open and close its circuit on a predetermined change in temperature in the boiler water.

Q. Then am I to understand that this immersion type having the long stem operates a Bourdon tube in a very similar manner to that of the room thermostat operated from a bellows?

A. Yes, both employ power elements and both are actuated by means of a volatile liquid within the power element. In the room thermostat the power element is a bellows element, whereas in the figure 36 and figure 37, immersion type controls, the power element is a Bourdon tube.

Q. What is the instrument illustrated on the top of Bulletin E-1 of March, 1925?

A. Do you mean the top of the first page?

Q. No, on page 4.

A. Oh, pardon me. Page 4 illustrates the figure 50
364 Mercoid warm air furnace control.

Q. Have you a specimen of that control here in court?

A. Yes, I have.

Q. There is a name plate on the top of that control, is there?

A. Yes.

Q. Are there any patent numbers on there?

A. This control shows three patent numbers.

Q. Is 1,734,016 one of the patent numbers?

A. No, that patent number is not shown.

Q. Can you tell by inspecting the casing of that control whether or not it operates in the same manner as the figure 31 boiler control and figure 36 and figure 37 immersion control?

A. Yes; this instrument operates in a very similar manner to the figure 36 immersion type hot water control, which I previously described.

Q. Can you tell why there is no patent number on there corresponding to this McCabe patent?

A. Well, yes. This instrument was built before patent 1,734,016 issued.

Q. Now, will you please explain the similarity?

A. The instrument body itself is, I can say, the same as the figure 31 Mercoid pressure type control. It is also similar to the figure 36 in that this instrument operates by means of pressure created through a volatile liquid filled element. However, instead of the volatile filled liquid, the filled bulb being connected in a piece to a hot water boiler, this instrument has attached to it a length of what is called capillary tubing, that is, a metal tubing with a very fine hole going through the center. At the far end of that capillary tubing there is what we might call a trombone-shaped element that is filled with a volatile liquid. This particular trombone-shaped element has been designed to be installed in a warm air furnace, and as temperature increases occur within the warm air furnace, those rises in temperature create a pressure within the volatile liquid, and that pressure is transmitted through the capillary tubing to the inside of the Bourdon tube of the control, and in turn the control operates to open and close the circuit at predetermined temperatures which occur at the remote stem trombone-shaped element.

Q. Is that instrument provided with any means of adjusting the temperature at which it operates?

A. Yes, there are two means by which this instrument can be adjusted for temperature operating points. There is an adjustment provided on the back of the case by means of which the snap-action mechanism position can be changed with relation to the Bourdon tube. That in itself will change the operating point. Another means of changing the operating range of the instrument is to slide the trombone-shaped element along the mounting flange, and that can be done by loosening a screw pro-

vided. Therefore, if only a small part of this trombone-shaped element is exposed to the air within the warm air furnace it would, therefore, take a higher temperature to create the pressure necessary to operate the switch unit. The more of the trombone-shaped element there is which is pushed into the warm air furnace, the lower will be the temperature at which the switch will respond to open the circuit.

Q. Now, referring to this illustration of the figure 50 in the bulletin; you have just described the manner in which the change may be adjusted by sliding the stem in and out of the furnace hood. Does it give you a standard range in the written description of this as to temperatures?

A. Yes. The standard range of the figure 50, and as is indicated in this bulletin, was from 250 to 300 degrees Fahrenheit.

Q. Have you explained how your figure 31 was at-
367 tached to the boiler or heater in the furnace?

A. The figure 31, which is the pressure type instrument, is directly attached to a steam boiler or to a pressure chamber. By directly attached, I mean that it is either directly screwed into the boiler itself or it can be screwed onto a siphon which would still permit pressure to go from the boiler into the control. However, it would prevent live steam from entering the Bourdon tube. In any event, the control is directly operated by the pressure within the boiler or chamber to which the control is attached.

Q. How is your figure 37 connected to the furnace or heater in a hot water heating system?

A. The figure 37, which is the back angle type of instrument, is installed in a tapping in the side of a hot water boiler. The instrument has a threaded connection, and by having an opening in the boiler which is threaded, the control can be screwed into the boiler so that the copper bulb is on the inside of the boiler where it is subjected to the temperature of the boiler water, but any leakage from the boiler is prevented by means of the tight fitting tapered threaded connection that is provided on the control.

Q. You have already stated that the figure 50 is in-
368 serted, or at least the bulb is inserted, in the bonnet of a furnace, have you not, or did you state how that was mounted in connection with a warm air furnace?

A. No, I did not state very clearly other than to say that the trombone-shaped element was installed within the furnace. It usually is installed so that the trombone-shaped element is within the bonnet of the furnace, which is the section of the warm air furnace directly above what might be termed the combustion space or the fire pot that is inside of the sheet metal jacket that surrounds the wall of the furnace. The air temperature tends to rise around the fire pot, and the control being installed at the top of the furnace thereby regulates the temperature within the furnace itself.

Q. Have you any distinct recollection of ever having seen this trombone element of the figure 50 located in any other place than the bonnet of the furnace?

A. Yes, I distinctly recall an application wherein the trombone-shaped element of the figure 50 control was located in an electrically heated chamber for controlling the temperature of air within that chamber, and I also recall wherein the trombone-shaped element of the figure 50 control was installed in the stack of an automatic coal fired warm air furnace.

369 Mr. Moore: It is requested that a photostat of Mercoid Bulletin E-1 of March, 1925, be marked for identification as Defendant's Exhibit A.

(The bulletin was so marked.)

Mr. Moore: And a soft copy of the McCabe patent No. 1,734,016 is offered in evidence as DEFENDANT'S EXHIBIT B.

(The exhibit was so marked.)

Mr. Moore: ~~May it please~~ your Honor, I do not intend to introduce the physical exhibits as exhibits for the defendant because they are clearly illustrated in the illustrations in the booklets and bulletins. Now if the court would like to have me do so, I will be very glad to introduce them as physical exhibits at this time.

The Court: I do not care to have you introduce them.

Mr. Moore: Q. Mr. Schultz, did you always employ the same length bulb in the figure 36 control as that shown in this Bulletin E-1?

A. No; there have been other lengths of bulbs provided on both the figure 36 and figure 37 control. The standard that had been adopted by 1925 was a bulb that was approximately three inches in length and had a one-half inch threaded connection. Prior to that time the standard bulb had been six inches in length and was provided with a

one-quarter inch threaded connection. Later than 370 1925 the company produced bulbs that were approximately one and three-quarters inches in length and had a three-quarter inch threaded connection.

Q. I show you here Federal Mercoid control bulletin D, dated April 1, 1924, and ask you if you have any recollection of that being in use at the time you entered the employ of the Federal Gauge in 1925?

A. Yes, that bulletin was in current use in 1925.

Q. What does that bulletin show on the back of the cover, the back page?

A. It shows an illustration of the figure 31, Mercoid pressure control; also an illustration on the figure 36 Mercoid hot water control with a one-quarter inch connection and the six inch bulb, and also an illustration or, rather, a blue print, of a Mercoid thermostat equipped with flexible tube and bulb for remote control.

Q. That illustration of the hot water boiler control illustrates one with a longer bulb, does it not, that you have been referring to?

A. Yes, that is correct.

Q. Will you please read the statement appearing above the cut on the front or first page of this bulletin?

A. That reads: "The accompanying diagrams illustrate a few of the many applications of the Mercoid 371 controls for temperature, pressure, etc., and show correct wiring diagrams. Mercoid controls can be used for almost any work where it is desired to make and break an electric circuit according to temperature or pressure changes. Details of construction and operation of the Mercoid thermostat are furnished in a special circular sent upon request."

Q. Continue.

A. "Write us for additional information on controls for special requirements, giving details of the proposed application and statement of the work desired to be accomplished."

Q. What is illustrated directly below that statement?

A. That shows a typical wiring layout on an oil burner installation.

Q. What is the purpose of this data sheet?

A. The purpose of this data sheet was to show a few of the various typical installations of Mercoid controls as they were being made in 1924.

Mr. Moore: I offer a photostat of Federal Mercoid

Controls, Bulletin D, dated April, 1924, to be marked for identification as DEFENDANT'S EXHIBIT C.

(The bulletin was so marked.)

Mr. Moore: Q. Did you find any earlier applica-
372 tions of the Federal Gauge showing this long bulb on the hot water temperature control?

A. Yes, I am quite sure there were earlier bulletins on that particular instrument.

Q. I show you here Mercoid Bulletin C-1, dated April, 1923, and on the reverse page there is an illustration of the Federal Mercoid boiler controls. Is that the publication you had reference to?

A. Yes, that is correct.

Q. And does that illustrate the long length bulb in the boiler control?

A. Yes; at the bottom of the front page, or, rather, the back page, there is an illustration and a description of the figure 36, type of immersion boiler control having the six-inch bulb and the one-quarter inch threaded connection.

Q. Will you please read the writing on the left of that illustration?

A. That reads, "Bourdon tube type temperature controls for hot water boilers and vapor heating systems, made with vertical stem, or, when specified, with right or left angle stem. All one-fourth inch boiler connections."

Q. Have you got one of those physical instruments with a right angle stem here in court?

373 A. Yes, I have.

Q. Will you show the court just what it looks like?

A. (Showing instrument to the court.)

Mr. Moore: I ask that the photostat of Mercoid Bulletin C-1, dated April, 1923, be marked for identification as Defendant's Exhibit C-1.

(The bulletin was so marked.)

Mr. Moore: Q. While you were in the New York office of the Federal Gauge Company, did the company put out an industrial type of pressure and temperature control switch besides the figures 31, 36, 37 and 56?

A. Yes. At that time they were manufacturing an industrial line of controls that were known as the 848 pressure, temperature and vacuum controls.

Q. I show you here a publication of The Mercoid Corporation, entitled, "No. 848, Mercoid Control, Industrial

Type," and ask you if this is the one that you had reference to?

A. Yes, that is the bulletin.

Q. Will you turn to page 4? What is the illustration appearing on that page?

A. That is an illustration showing a cut-away section of the general type of No. 848 control. The purpose of this illustration was primarily to show the bellows 374 power element as well as the internal spring adjustments for setting the instrument's operating range as well as the operating differentials.

Q. The bellows power element you refer to is the element indicated by the legend 11, is that correct?

A. Yes, that is correct.

Q. What do you mean by this remote stem or bulb, referred to by the legend 10?

A. Well, that is the connection by means of which pressure is permitted to enter the bellows chamber and effect the operation of the control.

Q. Is that something like that long stem and bulb shown in figure 50?

A. On a remote stem type instrument it would have a capillary tube similar to figure 50 leading to a bulb element that would be filled with a volatile liquid. On a pressure type instrument this connection at the bottom would be a threaded connection for directly attaching the control to a boiler or pressure chamber.

Q. I ask you to look at the last page of this bulletin, and down at the lower right hand corner what do you find there?

A. That reads, "Form 9004—5M—3-27-28."

Q. What does that notation 3-27-28 indicate to you?

375 A. That indicates that this bulletin was printed on March 27, 1928, and that five thousand were printed.

Q. How do you know that?

A. Well, that has been a customary manner in marking bulletins; both for indicating the quantity printed as well as the date of the printing.

Q. Is that the custom of the Federal Gauge and The Mercoid Corporation?

A. Yes, that is correct.

Q. And do you still follow that custom?

A. We do on bulletins, yes.

Mr. Moore: I offer a photostat of Mercoid No. 848,

Mercoid control, industrial type, and ask that it be marked for identification as Defendant's Exhibit D.

(The bulletin was so marked.)

Mr. Moore: Q. I believe you stated that the power element in that No. 848 was a bellows, did you not?

A. Yes, that is correct.

Q. That operated the same as the bellows in the thermostat in the earlier bulletins, did it not?

A. The bellows operated the same.

Q. Expanded and contracted?

A. The expansion and contraction of the bellows element created the power for operating the control.

376 Q. Did you put on the market any other form of furnace control other than the figure 50 before you were transferred to Chicago?

A. Yes; before I was transferred to Chicago the company was manufacturing the M-51 type of warm air furnace control.

Q. Can you produce any literature showing that?

A. Yes, I can.

Q. I show you here a catalog No. H-5, 1929, put out by The Mercoid Corporation, and ask you if that is one of the documents you referred to?

A. Yes, that catalog H-5 does illustrate and describe the figure M-51 furnace control.

Q. I ask you to turn to page 24 of this bulletin and state what you find there.

A. Page 24 illustrates a front view and a side view of the figure M-51 warm air furnace temperature control.

Q. Now, what is the heading at the top of the page?

A. That reads, "Mercoid Furnace Controls. A new design in furnace controls employing a thermostatic metal coil for warm air furnace and booster fans."

Q. Now refer to page 25. What is the statement at the top of that page?

A. That reads, "Mercoid Furnace controls for
377 warm air furnaces. A positive safety device to prevent overheating."

Q. What appears below that statement?

A. There are illustrations of the figure 50 as well as the figure 50-L warm air furnace controls.

Q. Is the figure 50 illustrated on page 25 of this catalog of 1929 the same instrument as that illustrated in bulletin E-1 in 1925?

A. Yes, they are identically the same instruments.

Q. And you have the old instrument figure 50 displayed on one page as a Mercoid furnace control and on the opposite page you have an illustration and description of a Mercoid furnace control of a new design in furnace controls, the M-51, have you not?

A. Yes, that is correct.

Q. Were there any bulletins put out to your knowledge during the year 1929 illustrating and describing the M-51 new design of furnace control?

A. Yes, bulletins were printed.

Q. I show you here Mercoid warm air furnace control Bulletin S-83, dated 10-8-29, and ask you if that is the bulletin you had reference to?

A. That is correct.

Q. On the inside of this bulletin does it illustrate 378 the M-51 that you have referred to in the catalog number H-5?

A. Yes, it does.

Q. Does it illustrate any additional figures?

A. Yes; it shows an illustration of the figure M-52 Mercoid two circuit type warm air furnace control, and it also shows an illustration of figure M-53 Mercoid warm air booster fan control.

Mr. Moore: It is requested that a photostat of Mercoid Catalog H-5, dated 1929, be marked for identification as Defendant's Exhibit E, and a photostat of Mercoid warm air furnace control Bulletin S-83 be marked for identification as Defendant's Exhibit F.

(The bulletins were so marked.)

Mr. Moore: Q. Did the Mercoid or Federal Gange discontinue the figure 50 furnace control as soon as they put the new design M-51 furnace control on the market, do you know?

A. No. It has never been our company policy to immediately discontinue an instrument as soon as an improvement was placed on the market. Both type would be carried for a few years before one would be made or become obsolete.

Q. Can you produce a catalog of The Mercoid 379 Corporation for the year 1930?

A. Yes, I can.

Q. I show you here a Mercoid catalog No. H-5, dated 1930, and ask if that is the document that you had reference to?

A. Yes, it is.

Q. I call your attention to page 24 and ask you what you find there?

A. Page 24 shows illustrations and gives descriptions of the figure M-51, figure M-52, and figure M-53 warm air furnace temperature and booster fan controls. It also shows the side view of that same general type instrument and has an illustration number 5 showing various types of mounting flanges.

Q. What is the heading of this page?

A. The heading of that page reads, "Mercoid Furnace Controls. A new design in furnace controls employing a thermostatic metal coil for warm air furnaces and booster fans."

Q. What are these three figures K, L and M below the illustration of the side view?

A. Those are various types of mounting flanges that were available.

Q. Does the printing to the right of figure K de-
380 scribe the flange M?

A. Yes.

Q. What does it say?

A. That reads, "The stack type, furnished only when specified, is suitable for duct installation as shown in 'M', or on an upright section of the furnace.

"Both flanges are made of steel and may be reshaped to fit different contours without any danger of breaking."

Q. Now look on page 25. How is that page headed?

A. The heading of that page reads, "Mercoid Furnace Controls for Warm Air Furnaces. A positive safety device to prevent overheating."

Q. And what is shown below that heading?

A. Below that heading there are illustrations of the figure 50 and figure 50-L Mercoid warm air temperature controls.

Q. Are these the same illustrations that appear in the catalog of 1929?

A. Identically the same.

Q. I call your attention to page 32 and ask you what notation you find at the lower right hand corner thereof?

A. It reads, "Charles A. Lawes Company, Chicago—1-1-30."

381 Q. What does that indicate to you, that last number?

A. That indicates that this catalog was printed on January 1, 1930.

Q. Can you produce one of the instruments shown here as the figure M-51 control and illustrated in this catalog?

A. Yes, I can.

Q. Does it have a name plate on it?

A. It has a name plate reading, "Type M-51."

Q. And is there any patent numbers on that?

A. Yes, there are four patent numbers shown.

Q. Do you find patent No. 1,834,288?

A. Yes, that number is shown here.

Q. Will you be able to explain to the court better the operation and construction of this M-51 from an enlarged view of the Patent Office drawing?

A. I could.

Q. I show you here enlarged view of sheet 1 of the I. E. McCabe patent, No. 1,834,288, granted December 1, 1931, upon an application filed August 5, 1929, and an enlarged view of sheet 2 of the same patent. Will you please take the pointer and explain to the court very briefly how this M-51 Mercoid furnace control is constructed and operates?

382 A. This instrument is made up essentially of four major parts. First, the metal protecting case which surrounds the operating mechanism and the Mercoid switches, that case being designated as No. 4 in Fig. No. 1. Next there is a bi-metallic power element which is designated as No. 1 in Fig No. 1. That bi-metallic power element consists of two metals of dissimilar coefficient of expansion which are welded together, one metal generally being known as invar steel, which has a very low coefficient of expansion, and another metal of a high coefficient of expansion, so that when temperature changes occur on the bi-metallic element, and with one end of the element permanently fastened at the control, there is a tendency for the other end of the bi-metallic element to rotate.

Now, the next important element of the control,—and I will explain the general operation later,—is an operating mechanism which is shown generally in Fig. No. 2 as right in the very center of the instrument and in greater detail in Figs. Nos. 4, 5, 6, 7 and 8.

In the operating mechanism there is a dial which is calibrated in temperatures, the standard temperature range, and as shown on Fig. No. 2, the calibrations being from 50 to 650 degrees Fahrenheit.

383 There are also provided two adjustment pointers by means of which the high range of the instrument can be set, as well as the low range. It is merely necessary to push back on the adjustment pointers and the pointers respectively can be moved around the dial to any operating temperature decided upon.

Now, the operation of this instrument generally is that with the bi-metallic thermal element located in a furnace bonnet or in a stack or in any chamber where it is desired to control the temperature within the chamber, as a change in temperature occurs, that is, as the temperature is rising, the bi-metallic coil will twist in one direction at its free end which is attached to an operating shaft, that is designated as No. 5 on Fig. 1, and passes back through the bi-metallic coil and through the metal extension sleeve, which is not shown by any number here but which is attached to the back of the instrument case, and that shaft No. 5 passes into the body of the control where it is attached to what is designated as the operating mechanism, and which consists of the mechanism having the calibrated temperature range. Now, as the bi-metallic coil turns, it turns this operating mechanism, and, briefly, what occurs is that, when the temperature reaches the high setting on the instrument the
384 mechanism then functions to operate the Mercoid switch, shown as No. 22 in Fig. 2, and causes it to open its circuit, and when the temperature again lowers to the setting as shown by the low temperature indicator pointer No. 35, the Mercoid switch will close its circuit.

It is possible, by changing the position of the Mercoid switch 22, that is, reversing its relative contact end position to just reverse the operation; that is, have the circuit closed when the temperature rises and have it open when the temperature falls. Or the same instrument can be provided with two switches, as shown in Fig. 3, where they are switches No. 22—well, they are both designated as No. 22—and when the instrument functions in this case at the settings as indicated by the pointers, then one circuit is simultaneously made as the other circuit is broken.

The Court: That will be enough for today, don't you think?

Mr. Moore: I think so, your Honor.

The Court: We will recess until ten-thirty tomorrow.

Mr. Moore: I have here a bound volume of copies of the patents that are going to be introduced in evidence and have been introduced in evidence for your Honor.

The Court: I understand these are still not being
385 introduced to invalidate the patent?

Mr. Moore: No, we have not attacked the validity of the patent at all.

Mr. Freeman: And it has no bearing against Minneapolis-Honeywell.

Mr. Moore: And has no bearing against the unwilling plaintiff, Minneapolis-Honeywell.

Whereupon an adjournment was taken to 10:30 o'clock a. m., Thursday, September 11, 1941.

386 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company,
*vs.*
The Mercoid Corporation.
Before Igoe, J.

Thursday, September 11, 1941,
10:30 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Bair, Freeman, Moore.

ALBERT N. SCHULTZ, a witness on behalf of the defendant, having been heretofore duly sworn, resumed the stand and testified further as follows:

*Direct Examination (Resumed) by Mr. Moore.*

Mr. Moore: I offer in evidence a soft copy of the McCabe patent No. 1,834,288 of December 1, 1931, as DEFENDANT'S EXHIBIT G.

387 (The exhibit was so marked.)

Mr. Moore: Q. Mr. Schultz, at the close of your testimony yesterday you had just finished explaining to the court the construction and operation of the Mercoid M-5 furnace control from the drawings of the McCabe patent No. 1,834,288. How does it happen you are so familiar with the construction and operation of the Mercoid controls which you have heretofore testified to, that is, the room

thermostat, the steam boiler control, the hot water boiler control, the figure 50 furnace control, and the M-51 furnace control?

A. Well, I have been associated with The Mercoid Corporation for sixteen years, and during that period of time have been closely connected with the engineering. In fact, I am in charge of the engineering at the present time, and there has not been a day gone by but what I have had to discuss the controls themselves, either with individuals, or have had to analyze field problems that are brought in or sent in by our sales engineers throughout the country. In fact, you might say I have lived and slept with Mercoid controls for that sixteen years. Furthermore, I have had complete charge of the preparation of literature for a number of years. So I am just familiar with them.

388 Q. Have you devoted much time and preparation for your testimony in this case?

A. No, only to the extent that I have reviewed the literature which the company published a number of years back; that is, to the extent of checking up on operating ranges, and things of that nature, where controls have become obsolete.

Q. You testified yesterday afternoon to the construction and operation of the M-51. Now referring to the enlarged drawing, where do you find the thermal element responsive to temperature changes? Have you an instrument behind you there, an M-51?

A. The thermal element responsive to temperature changes in this spiral bi-metallic coil which is attached to the fixed sleeve length at the back of the instrument. The other end of that is attached to the operating shaft, so that as the coil rotates the shaft accordingly rotates and transmits movement to the internal mechanism of the control.

Q. Where is that element located in the heater?

A. Well, that would depend entirely on its application. If it were on a warm air furnace, for which this instrument has been primarily designed, it would then be located in the bonnet of the furnace or in the ducts leading from 388 the furnace to the various rooms of a residence, or it might be located in the stack.

Q. Yesterday we referred to Mercoid catalog No. H-5, 1930, and the illustration therein on page 24 of the M-51 with the thermal element. Does this catalog show any other Mercoid control employing a bi-metallic coil as the power element which is responsive to changes in temperature?

A. What page?

Q. Referring to page 12.

A. Yes, on page 12 it shows the type M-1 Mercoid Pyratherm, also the type SM Mercoid Pyratherm, both of which employ the bi-metallic coil and were designed for use in the stack.

Q. Does that catalog show the 848 Mercoid control heretofore referred to?

A. Yes. On page 20 it illustrates and describes the models A, B, C and D, No. 848, pressure and vacuum type controls, and on page 21 it illustrates and describes the models G-1 and G-2, 848 type temperature operated controls.

Q. Now, if you will open to page 24, and you will find page 25 facing it, will you not?

A. Pardon me; may I hear that question?

389 Q. You will find the pages face each other, pages 24 and 25.

A. That is right, yes.

Q. Is there any difference in the construction and function of the figure 50 control shown on page 25 of this catalog of 1930 and the figure 50 illustrated in the Mercoid Bulletin E-1, Defendant's Exhibit A?

A. No, they are identically the same instruments.

Q. Is there any difference in the purpose and use of the M-51 illustrated on page 24 of this catalog and the figure 50 control illustrated on the next page of this catalog?

A. No, those type instruments are for the same purpose and use. The M-51 type was a new design of warm air furnace control that had distinct advantages over the figure 50 type. The primary advantages were that the figure M-51 had a dial that was calibrated in degrees and it had adjustable pointers for setting the cut-in and the cut-out temperatures, and it also had an indicator which would show the temperature which prevailed on the bi-metallic coil. Those features were not available in the former figure 50 control. However, the two instruments were for the same general purpose.

Q. I believe you stated that the figure 50 furnace 390 control could be adjusted, did you not?

A. Yes; there were two means of adjusting the figure 50 control, one by an adjustment means that was on the back of the instrument case, and another means was by sliding the trombone element further into or further out of the space where the temperature was being controlled.

Q. Between what temperatures could the figure 50 be adjusted to operate?

A. The figure 50 control when employed as a warm air limit control, that is, opening its circuit on a rise in temperatures, was adjustable from 250 to 300 degrees Fahrenheit.

Q. I show you here a Mercoid publication, entitled "Mercoid Controls, Copyright 1927," and ask you to look on page 11 and state what you find there.

A. That page 11 illustrates and describes the figure 50 as well as the figure 50-L, Mercoid furnace controls.

Q. Does a statement appear on the left hand side of that illustration as to the temperatures at which this control may be adjusted?

A. Yes, that reads in the second paragraph, "The standard range for dual control on motor driven units is from
391 250 degrees Fahrenheit to 300 degrees Fahrenheit. The range may be adjusted by simply sliding the stem in or out of the furnace hood above the dome, or by standard adjustment on the back of the instrument. Adjustable up to 300 degrees Fahrenheit or 350 degrees Fahrenheit or down to 200 degrees Fahrenheit to 250 degrees Fahrenheit."

I might explain that last sentence means that if it were set at its highest range the instrument would cut out at 350 and in a 300, because it had an operating differential of 50 degrees Fahrenheit. If it were set at its lowest point it would cut out at 250 degrees Fahrenheit and in at 200 degrees Fahrenheit, the difference being due to the operating differential.

Q. Did the Mercoid Corporation put out a Mercoid furnace control figure 50 which would operate at lower degrees than which you have mentioned?

A. Yes; when that instrument was employed in connection with booster fans on warm air installations there was a slight change made to the extent that the Mercoid switch was reversed in its position so that it would close the circuit as the temperature would rise and in that case there was a different volatile liquid charging in the trombone element, so that the instrument then had a range adjust-
392 able from 190 degrees to 140 degrees; that is it would close at 190 and open the circuit at 140.

Q. Now will you please read the paragraph following the one you just read?

A. That reads: "The standard range for control of

furnace fan on booster installations is from 130 degrees Fahrenheit to 140 degrees Fahrenheit, cutting in at the high point to start the fan motor, and cutting out when the temperature drops to the low point.

Mr. Moore: I request that a photostat of the Mercoid publication entitled, "Mercoid System of Direct Control," the reverse of that page bearing a copyright notice, and page 11 of this publication be marked for identification as Defendant's Exhibit G-1.

(The bulletin was so marked.)

Mr. Moore: Q. Is there any difference in the operation and use of the Mercoid furnace control M-51 and the Mercoid Pyratherm M-11 as illustrated in the Mercoid catalog H-5 of 1930?

A. Pardon me; I think your question is wrong, because in 1930 I questioned the M-11 Pyratherm was shown. There was an M-1 Pyratherm.

Q. M-1 I should have said. The M-1 Pyratherm is shown on page 12 of that bulletin, and the M-51 is shown on page 24, is it not?

393 A. Yes, that is correct.

Will you please read the question?

(The question was read by the reporter as above recorded.)

A. Yes, those instruments operate in an entirely different manner from one another and they were designed for entirely different uses. The type of the figure M-51 control is equipped with a calibrated dial and adjustments by means of which that instrument can be set to operate at definite temperature points, whereas the type M-1 Pyratherm was designed for use in connection with oil burners, where the instrument was employed in the stack and that instrument operates on a differential change in temperature but not at any fixed temperatures.

Q. You had a physical specimen of the M-1 a minute ago, did you not?

A. Yes, I have it.

Q. Are there any patent numbers on the name plate?

A. Yes; this instrument shows four patent numbers.

Q. Does patent No. 1,762,183 appear on that name plate?

A. Yes, it does.

Q. Referring to the catalog you have in your hand, I note on page 31 there are several wiring diagrams. Do

these wiring diagrams and those on page 32 illustrate 394 application of the M-51 Mercoid furnace control?

A. Yes; the six diagrams on page 31 and five of the diagrams on page 32, that is, all of the diagrams with the exception of No. 730, illustrate or show systems in which the M-51 furnace control could be employed. In these diagrams the furnace control would be illustrated as the circle showing a Mercoid switch. Within and underneath the illustration it reads, "Mercoid boiler or furnace control."

Our reason for designating it that way was that there are primarily three types of heating systems; that is, a steam system, a hot water system, and a warm air system, and by designating the limit control in this manner a single diagram would then apply to the three different types of heating systems and thus cut down on the number of diagrams which it would be necessary for us to show.

Q. What was the purpose of these diagrams?

A. The purpose of these diagrams in this catalog is indicated by the headings on both pages, which read, "Typical Mercoid Wiring Diagrams." These show just a few of the many applications that would be made, or the use of Mercoid controls in connection with heating systems.

395 Mr. Moore: I ask that the photostats of the front page of the Mercoid Catalog No. H-5, 1930, page 12, page 20, page 21, page 24, page 25, and pages 31 and 32, be marked for identification as Defendant's Exhibit H.

(The bulletin was so marked.)

Mr. Moore: And that a copy of the McCabe patent No. 1,762,183 be introduced in evidence as Defendant's H-1.

(The exhibit was so marked.)

Mr. Moore: Q. Did you have many competitors in the manufacture of controls of this character when you first joined the Federal Gauge Company in 1925?

A. Yes; there was Minneapolis Heat Regulator Company, Honeywell Heating Specialty Company, and very shortly thereafter was Absolute Contactor Corporation.

Q. What did the Honeywell Heating Specialties Company make?

A. They made primarily heating controls and damper motor equipment for use in connection with hand fired coal furnaces.

Q. Can you produce any literature of the Honeywell Specialties Company?

A. Yes, I can.

Q. I note that the pamphlet you have in your hand is entitled, "Honeywell Specialties and The Honeywell 396 System of Hot Water Heating," is that correct?

A. Yes, that is correct.

Q. Will you kindly refer to pages 22 and 23 of that pamphlet? I notice that there are some figures displayed thereon. Can you tell me what the figure or diagram on page 22 illustrates?

A. Yes. That illustrates the use of the Honeywell damper motor on a hand fired coal burning hot water heating system wherein the Honeywell damper motor was controlled by a Honeywell room thermostat.

Q. What is the statement below this title, "Hot Water," under the drawing?

A. That reads, "How any model Honeywell temperature regulator can be connected to a hot water heating plant."

Q. Will you kindly read the letter published at the top of this page?

A. That letter reads:

"Buffalo, N. Y.
December 24, 1915.

Honeywell Heating Specialties Company,
Wabash, Indiana.

Gentlemen:

I installed in my residence one of your temperature regulators in connection with the heating plant and 397 wish to express to you the great service and kindness that you have done to me and mine by leting me know of this very practical and sensible device."

Q. That is sufficient. Now there is a letter also on the top of page 23. Will you read that?

A. That letter reads:

"Milwaukee, Wisconsin,
December 20, 1915.

Honeywell Heating Specialties Company,
Wabash, Indiana.

Gentlemen:

The Model 8 clock which you recently repaired for me arrived in good condition and I thank you for your courteous treatment. I also wish to add that the regulator is entirely satisfactory and I consider it as good an investment as I ever made.

Yours truly,
H. T. Erickson,
453 24th Avenue."

Q. Now will you please look on pages 24 and 25. There are some diagrams on the bottom of each of these pages. What does the diagram on page 24 illustrate?

398 A. That illustrates the use of a Honeywell damper motor in connection with a hand fired coal burning steam or vapor boiler wherein the damper motor is electrically controlled by a Honeywell thermostat, and in addition there as a diaphragm operated pressure regulator which is also connected in the arrangement of chains that are attached to the damper motor and in this connection the diaphragm operated regulator acts as a limited control to close the draft and open the check in the event of excessive pressure within the boiler.

Q. What is the diagram on page 25?

A. Page 25 shows a diagram covering the use of a Honeywell damper motor in connection with a coal fired hot air heating system, the damper motor being controlled electrically by a Honeywell room type thermostat.

Q. And what does the statement that appears at the bottom of that page say?

A. That reads, "How any model Honeywell temperature regulator can be connected to hot air furnace."

Q. Can you produce any other literature of the Honeywell Specialties Company?

A. Yes, I can.

Q. I notice that you have in your hand there a pam-

phlet entitled, "Honeywell Heating Specialties." Will
399 you please refer to page 4 and state what is illustrated thereon?

A. That page illustrates the new Honeywell electric regulator motor.

Q. What does paragraph 3 on that page state?

A. That reads:

"Eight years were required to develop this motor to its present degree of perfection. Motors in test, without attention of any kind, have made as many operations as would be required to control the average heating plant for more than 100 years."

400 Q. Please refer to page 14. What is the title appearing at the top of this page?

A. That title reads: "Regulator Installations."

Q. What is the diagram at the top of the page; is there a description in writing to the left of it?

A. Yes, that description reads, "Hot water boiler with thermostat, electric motor, heat generator and hot water valve."

Q. And there is a diagram at the bottom of that page. Is there a descriptive statement appearing opposite?

A. Yes, that reads, "Warm air furnace with thermostat and spring motor."

Q. Now turn to page 15. What is the diagram or how is the diagram described at the top of the page?

A. That diagram is described as, "Steam boiler with thermostat; electric motor and Vaporstat."

Q. What is the descriptive matter at the left of the lower diagram?

A. That reads, "Gas boiler with Honeywell motor valve, thermostat, Aquastat, or Vaporstat."

Mr. Stone: Mr. Moore, at this time I would like to ask what these two Minneapolis-Honeywell—

Mr. Freeman: That is Honeywell instead of Minneapolis-Honeywell.

401 Mr. Stone: I beg your pardon: (Continuing) —these Honeywell catalogs, defendant's Exhibits I-1 and I-2, are being introduced for here? Is that for the purpose of showing prior art?

Mr. Moore: I have stated that we have not attacked the validity of the Cross patent. They are being introduced to show that it was old in 1914 and 1915 to use a dual control combination in heating furnaces.

Mr. Stone: Mr. Moore, I do not see how that issue has been questioned in the pleadings here. I can see how these catalogs brought out by Mercoid Corporation might be very helpful in bringing out what you were doing prior to the time that they brought out all this literature on this particular infringing control.

Mr. Moore: There is no infringing control before the court.

Mr. Stone: This installation, such as we had in 1937, such as we had in Exhibit 37, and which included the M-61. I can see how these exhibits introduced by the defendant here, exhibits of the Mercoid Corporation, are pertinent to show what they were doing before, but I can see no pertinency to these exhibits of Honeywell Heating Specialties, or of any other concern, and I think I will object to the introduction of these two.

402 The Court: What is the reason you are putting these in?

Mr. Moore: Your Honor, I was putting them in to show that was old long before The Mercoid Corporation ever came into business; that it was customary in heating systems, hot air heating systems, to employ a room thermostat to control the operation of a motor, to operate dampers, and with safety devices, in the event that the temperature within the furnace became excessive to close the dampers.

The Court: Is there dispute about that?

Mr. Stone: Not at all.

The Court: They admit that was the situation.

Mr. Moore: I would just like to make this a matter of record, that is all.

The Court: Just this one.

Mr. Moore: One will be sufficient.

The Court: All right.

Mr. Moore: Q. What does page 18 state at the top?

The Court: If you are going to introduce this, why do you have to have him read into the record what it states?

Mr. Moore: Just the title. In the diagrams they refer to the Aquastat, Vaporstat, and water regulator, and these are descriptions of the operation. That is the only reason I wanted to have them identified.

403 The Court: All right, go ahead.

The Witness: A. That page reads, "Aquastat."

Mr. Moore: Q. And there is a description of that Aquastat below it, is there?

A. Yes, that is correct.
Q. And page 19?
A. The heading of that page reads "Vaporstat."
Q. And there is a description of the Vaporstat below it?
A. There is an illustration and description, yes.
Q. And page 28?
A. The heading of that page reads, "Water Regulator."
Q. And there is a description and illustration below it?
A. That is correct.
Q. Where did these two pieces of Honeywell Heating Specialties' literature come from?
A. I believe these came from the company's files.
Q. And in whose custody have they been?
A. They have been in my personal custody.

Mr. Moore: The photostat of Honeywell Specialties and The Honeywell System of Hot Water Heating, the cover page, page 22, page 23, page 24 and page 25, is offered in evidence as DEFENDANT'S EXHIBIT I-1.

Mr. Stone: Your Honor, the plaintiff Mid-Continent wishes to object to the introduction of Defendant's 404 Exhibits I-1 and I-2 at this time on the ground that they are immaterial.

The Court: The objection is overruled. They may be admitted.

(The exhibit was so marked.)

Mr. Moore: And I offer in evidence a photostat of the cover page of Honeywell Heating Specialties, and pages 4, 14, 15, 18, 19 and 20, as DEFENDANT'S EXHIBIT I-2.

(The exhibit was so marked.)

Mr. Moore: Q. I believe that Mr. Cross on his direct, or redirect examination, referred to the thermostatic control which maintained the fire as the heart of the heating plant. Do you know whether or not Minneapolis Heat Regulator Company had ever used that expression in the years gone by?

A. Yes, I believe they have.

Q. I notice that you have a publication there entitled, "Heat of the Heating Plant."

The Court: "The Heat of the Heating Plant?"

Mr. Moore: "The Heart of the Heating Plant."

Q. (Continuing.) And that is a publication of the Minneapolis Heat Regulator Company?

A. Yes, that is correct.

Q. On page 3 there is a general description of the 405 heat regulator and on page 8 the heading is, "The Heart of the Heating Plant Stops the Waste in Your Fuel Bin."

There is also a letter reproduced at the bottom of that page. Will you please read the address, date, and the first paragraph?

A. That reads:

"Bristol County Savings Bank
Taunton, Massachusetts.

"August 11, 1914.

"I purchased a Minneapolis heat regulator for this Bank and also one for my residence, and both are exceedingly satisfactory."

Mr. Moore: A photostat of the cover page of the "Heart of the Heating Plant," page 3 and page 8 are offered in evidence as DEFENDANT'S EXHIBIT I-3.

Mr. Stone: Your Honor, I object to the admission of that document in evidence on the ground that the statement made by the plaintiff's expert was that it was the heart of the combination and that the exhibit is consequently immaterial.

The Court: The objection is overruled. It may be admitted.

(The exhibit was so marked.)

406 Mr. Moore: I believe you mentioned that the Absolute Contactor Company was one of the competitors of the Federal Gauge in 1925 or thereabouts. Do you know what became of the Absolute Contactor Company?

A. Yes; as I recall, they were purchased or bought up by Time-O-Stat Controls Company in about 1928.

Q. Do you know whether or not these competitors of the Federal Gauge Company had on the market a stack switch employing a thermostatic element similar to the Mercoid Pyratherm M-1, or the Mercoid furnace control M-51 just before you came to the Chicago office in 1930?

A. Yes, I am sure they did.

Q. Can you produce a catalog of Time-O-Stat controls that you stated absorbed the Absolute Contactor Company?

A. Yes, I can.

Q. I notice you have in your hand a pamphlet entitled,

"Automatic Controls For Oil Burners, 1929," and at the bottom, "Time-O-Stat Controls Company." I ask you to refer to the first page within the cover, and read the statement below the design thereon.

A. That reads "Also manufacturers of automatic controls for gas burners, coal burners, electric refrigerators, mechanical stokers, furnace fans, industrial ovens, ice machines, unit heaters, water heaters. Also sign flashers, mercury switches, electric heaters, corrugated metal
407 bellows."

Q. I ask you to refer to page O-10. What is the heading on that page?

A. The heading of that page is, "The Stackswitches."

Q. What is the illustration on that page?

A. The illustration reads, "The No. 48H Stackswitch."

Q. Will you please read the first sentence under the heading, "Operation in General"?

A. That reads: "A helix of bi-metal extending rearward from the housing of the stackswitch is inserted in the stack of the boiler or furnace three feet or more from the breeching or where the maximum temperature does not exceed 1000 degrees F."

Q. I ask you to refer to the next page, O-11. Do you find the stackswitch illustrated thereon?

A. On that page there is an illustration of a wiring hook-up in which the No. 48 MR stackswitch is included in the circuit.

Q. And does that illustration show that it possesses a helix of bi-metallic metal?

A. Yes, from that illustration I would say there is a bi-metal helix at the back of the control unit.

Q. Now refer to page O-24: what is the statement at the head of that page?

408 A. At the head of that page it reads, "Warm air furnace limit controls."

Q. Do you find an illustration on that page, and if so, how is that entitled?

A. Yes; there is an illustration, and it is entitled, "The No. 68 Furnaceswitch."

Q. Does that furnaceswitch employ a helix of bi-metallic metal?

A. From the illustration I would say yes, there is a helix of bi-metal shown at the very far end of the metal extension sleeve on the control.

Q. Will you please read the first sentence in the second paragraph under the heading; "Application of Various Models"?

A. Was that the second paragraph?

Q. On page 24.

A. That reads: "By proper adjustment of the temperature setting of the furnaceswitch, this control may be used either as the operating control of the furnace or as a safety cut-out for excessive temperatures."

Q. Where did this publication come from?

A. That came from my own personal files.

Q. And it has been in your custody until it was brought into court?

409 A. Yes, that is correct. I brought this with me from the New York office.

Mr. Moore: A photostat of the cover page, pages O-1, O-10, O-11 and O-24 of "Automatic Controls," of the Time-O-Stat Controls Company, is offered in evidence as DEFENDANT'S EXHIBIT I-4.

Mr. Stone: Plaintiff Mid-Continent Company, your Honor, objects to Defendant's Exhibit I-4 on the ground that what other manufacturers are doing is immaterial to the issues in this case.

The Court: The objection is overruled. It may be admitted.

(The exhibit was so marked.)

410 Mr. Moore: Q. Have you any literature of Minneapolis-Honeywell Regulator Company of about the same date?

A. Yes, I have.

Q. I notice you have in your hand there a catalog from the Minneapolis-Honeywell Regulator Company, and I ask you to refer to the last page therein. What is the notation in the lower left-hand corner?

A. It reads: "P. Inc. SA128 5-28 5M."

Q. I believe you stated that you had written the bulletins and catalogs of The Mercoid Corporation. What would a notation of that kind appear to mean to you?

A. That would appear to me to mean that 5,000 of this particular catalog were printed in May of 1928 by a company that is represented by the P. Inc.

Q. I ask you to refer to page 23.

The Court: Let me ask you, what is the sense of asking the last question and what information do you elicit, as

the result of it? You asked him what that meant, and all he did was to read what was on the paper. You are going to introduce that as an exhibit, and I cannot get in my head why you have him read from that paper.

Mr. Moore: I want to show that this was published two years before the patent.

The Court: All his answer gave you was what was 411 on the exhibit; that is all he could give you.

Mr. Moore: I will try to cut my questions down.

Q. I ask you to look again at page 23 and page 26. Page 23 is entitled "The Pyrostat." Does the illustration below this title illustrate a helix of bi-metallic metal?

A. Yes, it does.

Q. I ask you to look at page 26, which is entitled "Type B Combustion Safety Control," and there is an illustration of that instrument. Does that employ a helix of bi-metallic metal?

A. Yes. In the second paragraph in the left-hand column it says, "The actuating element is a coil of bi-metallic metal."

Mr. Moore: Photostats of the front page and pages 23, 26 and last page of this Minneapolis-Honeywell Regulator Company catalog are offered in evidence as DEFENDANT'S EXHIBIT J.

Are you going to object, Mr. Stone?

Mr. Stone: Yes.

Mr. Moore: Before you object, let me ask a question.

Q. Where did this catalog come from?

A. This catalog came from my own personal files.

Mr. Stone: The same objection.

The Court: The same ruling.

412 (The exhibit was so marked.)

Mr. Moore: Q. I believe, Mr. Schultz, you stated you did not find much activity in the automatic stoker business in the East while you were in the New York office, is that correct?

A. Yes, that is correct.

Q. What did you find to be the condition of the stoker business when you came to Chicago in 1930?

A. About 1930, or shortly thereafter, the stoker industry started to have a phenomenal growth. By that I mean there were manufacturers of stokers springing up throughout the entire Middle West.

Q. I also understood you to state that you wrote the

Mercoid bulletins after you came to Chicago in 1930, is that correct?

A. Yes, that is correct.

Q. What is the first bulletin that you wrote?

A. As I recall, Bulletin A-14.

Q. And what was that bulletin entitled?

A. That bulletin covers Mercoid automatic controls for stokers and forced draft coal burning equipment.

Q. That is the bulletin that you have in your hand at the present time and which is entitled Bulletin A-14?

A. Yes, that is right.

413 Q. Is there anything on that bulletin which indicates when it was printed?

A. Yes. On the inside of the first page at the lower left hand corner is the marking 2-8-31, which indicates that this bulletin was printed on February 8th of 1931.

Q. What is shown on page 3 of this bulletin?

A. Page 3 illustrates and describes the No. 855 Mercoid Heating Type Thermostat.

Q. Is that a room thermostat?

A. Yes, that is a room thermostat.

Q. What do you find illustrated on Page 4?

A. Page 4 illustrates and describes the No. 858 Model AA-3 Mercoid Type Pressure Control; also the No. 848 Models of Pressure Controls; also the figure 31 type Mercoid Pressure Control.

Q. What do you find on page 6?

A. Page 6 illustrates and describes the figure 35 Mercoid Clamp on Type Hot Water Control, which was called the Risertherm; also the figure 36 and figure 37 Mercoid immersion type controls; also the No. 848 Models G-1 and G-2 immersion type hot water temperature controls.

Q. What do you find on page 7?

A. Page 7 illustrates and describes the Type M-61 Mercoid Stoker Control.

414 Q. What is the purpose of this Mercoid M-61 stoker control?

A. That control served three definite purposes.

One purpose was to prevent extinguishment of the fire, of the stoker fire, during long periods when the room thermostat would not call for heat and accordingly would keep its electric circuit open.

The next application of the Type M-61 control was to act as an over temperature control. That is, when it was

installed in the stack and was set for a high temperature, when that high temperature would be reached it would then open the circuit, because the boiler was operating at maximum efficiency, and by thus stopping the stoker it would conserve fuel and result in more economical operation.

Q. You mean, it would act in the same manner as a furnace control?

A. It would act as a temperature limit control, but as a stack temperature limit control merely to conserve fuel.

There was a third application for that control, wherein it was employed as an out fire control. The only difference when the instrument was employed as an out fire control was that it was arranged to break the electric circuit on a drop in stack temperature; that is, the Mercoid switch was reversed in its position, and to distinguish that control from the control which opened its circuit on a rise in temperature the out fire control was given the designation of Type M-63.

Q. I notice on the bottom of that page there are some wiring diagrams. Do they illustrate the manner in which the M-61 was located in the furnace, and how it is connected up with the other elements of the control system?

A. Yes.

Q. Will you step down, and just as briefly as you can indicate to the court where the M-61 is positioned in Diagram No. 1?

A. In diagram No. 1 the Type M-61 control is located in the stack leading from the boiler to the flue exhausting to the atmosphere.

Q. And can you state very briefly how it prevented the fire from going out?

A. Yes. In this particular diagram there are three controls,—a room thermostat, a steam or hot water limit control and a Type M-61 stack control.

The circuit is such that the Type M-61 stoker control is connected in parallel with the room thermostat. Ahead of that combination is the Mercoid steam or hot water control, which is directly in the circuit.

416 Now, at any time that the room thermostat calls for heat, the current then passes from the dotted line up through the room thermostat, through the boiler limit control and through the stoker motor.

In the event the room thermostat remains in the off position for a long period of time so that the temperature in

the stack drops and closes the circuit of the M-61 control, this control then provides a path of current through the switch by permitting the current to flow directly through the M-61 control, from there through the boiler limit control, back to the stoker motor. The stoker will then fire until there is a slight rise in the stack temperature to open the circuit of the M-61 control unit.

Q. Is this control here given any number?

A. No, that control shown on top of the boiler is merely designated as Mercoid steam or hot water control, because this diagram covers a steam or hot water system with the limit control of either type, either the pressure type or hot water type.

Q. What does Diagram No. 2 illustrate?

A. Diagram No. 2 illustrates a hook-up in connection with a steam boiler, wherein the system employes the No. 855 room thermostat located in the living quarters and 417 two of the Type M-61 stoker controls, both of which are located in the stack, and, in addition, there is a combination pressure and low water control, which is attached to the boiler.

The room thermostat functions the same as it did in diagram No. 1.

The M-61 stoker control No. 1 operates as a fire maintaining control; that is, to prevent extinguishment of the fire in the event the room thermostat remains in the off position for a long period of time.

However, in the circuit feeding to the stoker, the current must take the path either through the room thermostat or through the fire maintaining control, which is the M-61 No. 1, and from there pass through the M-61 control shown as No. 2 before the current can in turn get through the boiler limit control and to the stoker motor.

Now, that means that with a high setting on the M-61 control, illustrated as No. 2, that in the event the stoker is firing and building up an excessive amount of combustion in the combustion chamber, accordingly you get a high temperature in the stack, which would indicate that you are overfeeding your boiler, you are putting in more fire than the boiler can utilize; then the M-61 control No. 2 will open its circuit and stop the stoker until 418 the stack temperature lowers to a point where you can again operate your boiler efficiently. During that period that the stoker is stopped, you have more economi-

cal operation and you conserve more fuel than if such a control was not employed.

Q. Now, the use of the No. 2 M-61 is about the same as the M-51, is it not?

A. Yes, it operates in the same manner, and it operates to stop the stoker in the event of an excessive temperature.

Q. And it is a furnace limit control?

A. That is right.

Q. What does Diagram No. 3 show?

A. Diagram No. 3 covers the wiring hook-up of a stoker in connection with a warm air furnace, which is equipped with an air circulating fan, that is, a booster fan to force air through the heating ducts.

In this system is employed the Mercoid room thermostat and the Type M-52 Mercoid stoker and fan control, in conjunction with the Type M-51 Mercoid furnace limit control.

Now, by this arrangement, briefly, the current can take an optional path; either going through the room thermostat, or through the Mercoid switch, which is shown 419 as the top one in the M-52 type of control, and from there down through the M-51 limit control to the stoker motor.

If the thermostat calls for heat and the furnace temperature is not excessive, the stoker will be operating. If the room thermostat is in the off position for a long period of time so that the temperature in the furnace bonnet drops down to a predetermined low point, then the M-52 will operate to close the upper circuit and fire the stoker until there is a slight raise in bonnet temperature.

Now, the M-52 control serves two purposes, in that it is equipped with two Mercoid switches with their contacts in opposite position, so that as that instrument operates it simultaneously opens one circuit and closes the other.

The first function of that control would be to control the circulating fan motor, in that it would be objectionable when the stoker was first started to immediately permit the circulating fan to operate, because if it did so then from the registers in the various rooms there would be a draught of cool air, which would be uncomfortable. So that this control by the M-52 serves the additional purpose of preventing the operation of the circulating fan until the air in the warm air furnace bonnet has been heated to a point where it will be comfortable as de-

420

livered from the registers, and when that temperature is reached, it operates to close the lower switch circuit and permits operation of the fan, as long as the bonnet temperature is higher than the setting of the M-52 control.

Q. What is this control in the bonnet of the furnace?

A. That is a Type M-51 Mercoid furnace limit control. That is set at a high temperature, so that in the event a stoker has been firing for a long period of time and the temperature in the bonnet of the furnace reaches a dangerous point, where it might create a fire hazard, then the M-51 control opens its circuit, and being directly in series with the stoker motor in opening the M-51 circuit the stoker motor is stopped and no further operation of the stoker can occur, until that bonnet temperature lowers to within safe operating limits.

Q. What is the name of this other control with the two switches on it?

A. That is the Type M-52 Mercoid stoker and fan control.

Q. That is mounted in the bonnet?

A. That is mounted in the bonnet of the warm air furnace?

Q. Did I understand you to say that the M-51 mounted in the bonnet was then used in this instance as a fire 421 maintenance control, one of those switches?

A. You mean the M-51?

Q. No.

A. Or the M-52?

Q. The M-52, containing the two switches.

A. Yes, the M-52 mounted in the bonnet of the warm air fan acted as a furnace control and also acted as a fire maintaining control for the stoker to prevent extinguishment of the fire when the thermostat remained in the off position for a long period of time.

Q. And if you did not have this booster fan, it would be a fire maintenance control per se; wouldn't it?

A. That is right, and it would be the Type M-51 control in that case.

Q. Now, is there anything in this Bulletin A-14 on page 7 that refers to the M-51 control?

A. Yes. On the right hand column there is a heading, "Type M-51 and M-52 Warm Air Furnace Controls."

Q. What does it state in there?

A. That reads: "The Type M-51 Mercoid Control has been designed to prevent the overheating of stoker fired

warm air furnaces. It is identically the same as the figure M-61 stoker control, except that it has an adjustable mounting flange and a longer sleeve, which permits the
422 bi-metal operating coil to extend further into the furnace. By means of the adjustable flange the instrument can be easily installed on any furnace hood whether the angle is from 30 to 90 degrees."

It says further: "The Type M-52 Mercoid control is identically the same as the Type M-51, except that it has two separate circuits, the one closing on a dropping temperature and the other on a rising temperature."

The next paragraph would explain that No. 3 diagram.

Q. Please read it then.

A. That reads: "On a stoker fired warm air furnace equipped with an air regulating fan this control serves a dual purpose. It will intermittently fire the stoker for short periods at a time when the thermostat is in the off position and will permit operation of the circulating fan only when the thermostat is calling for heat and the furnace is heated."

Q. Can you produce a specimen of the M-61 stoker control illustrated in this bulletin?

A. No. Production on that unit was discontinued a number of years ago and no instruments are available.

Q. Are you familiar with it?

A. Yes, I am very familiar with it, of course.

423 Q. Have you handled the M-61 physically?

A. Yes. I am thoroughly familiar with it.

Q. Have you had much experience in handling the actual physical M-61 control in the way of demonstrating it to customers and otherwise?

A. Yes, I would say many hundreds of times.

Q. I believe we have got a physical instrument of the M-51 here in court, have we not?

A. Yes, that is correct.

Q. What is the difference, if any, between the M-61 as illustrated in this Bulletin A-14, on page 7 and the M-51 instrument?

A. The only difference of any consequence can readily be shown by a comparison between the M-51 control and this type M-1 stack control which I have. You will note that there is a considerable difference in the length of the metal sleeve projecting from the back of the case to the bi-metal coil.

Furthermore, the M-51 control is equipped with an adjustable flange so that it can be adapted to various angles of warm air furnaces. There is a nut which is tight on this one, but that flange could be arranged for mounting on an angle from 30 to 90 degrees.

On the other hand, the Type M-1 Pyratherm is
424 equipped with a curved type of flange, which is arranged to fit the curvature of the stack.

Now, by modifying the M-51 warm air control merely to the extent of shortening the sleeve length to the same length as the M-1 control and equipping it with the standard curved type of stack flange, that instrument was then designated as Type M-61 stoker control.

The only purpose in making a different designation was that it became a different stock instrument in the factory and that was our customary practice, when we changed the construction and carried the instruments in stock, we would give them a different type number. Subsequently, the instruments are the same, with the exception of the length of the sleeve and the type of mounting flange that was employed.

Q. That is merely a change in dimensions, is that correct?

A. That is all. It was merely a change in our manufacturing procedure in building up the length of the sleeve and the kind of a flange that we employed in connection with it, otherwise they were identically the same.

Q. Did you explain why it was advantageous to make this sleeve shorter in the M-61?

A. No, I did not, but that will be quite obvious.

425 On the Type M-51 control this was furnished with a long sleeve length, so that when it was employed on a warm air furnace the instrument could be slid through the sleeve, so that the bi-metal coil would extend further into the furnace, where it would be over the dome of the furnace.

Now, if that style instrument is employed on a stack with the normal diameter the stacks in domestic furnaces run from six inches to ten inches—then the bi-metal coil could only be placed a short distance within the stack and when it was mounted in the flange at that point, the instrument stuck out into the basement and it was apt to be damaged by somebody carrying a ladder and hitting the control, and another factor was that when it stuck too far out, with the main weight of the instrument in the case,

there was a tendency for it to twist the instrument off the stack, or at least put a strain against the stack. Since in connection with the stoker, the primary purpose was to install it on the stack, and this length of sleeve employed on the M-1 was a standard production unit with us, and it would greatly relieve the strain; it was merely a matter of changing our factory specifications to produce the M-51 with this length sleeve and with the curved flange, 426 which had been in production for years before, and it became a new model instrument, which we called Type M-61.

Q. I believe you stated that when you made a change in dimensions, it was the custom of The Mercoid Corporation to give it a different designation by number. Have you got one of the M-51's that has been changed to another number on account of its dimensions?

A. Yes. Here is another modification of the M-51 control which is definitely different than the standard M-51, yet these two instruments serve very closely the same purpose.

This one which you see with the long coil of bi-metal projecting from the back of the instrument has been designed for use in a warm air chamber where very close regulation of temperature was desired.

However, the sleeve length projecting from the back of the instrument has been shortened to be the same as the M-1 Pyratherm.

The longer coil of bi-metal generates power on a much smaller change in temperature than the shorter element, that is, of sufficient power to actuate the mechanism, and as a result the instrument operates on a much closer differential change in temperature or range, I might say a much closer regulation of temperature than the standard M-51. Due to the change in sleeve length 427 of this instrument and the change in the bi-metal coil, this was then designated as Type M-55.

So that every modification that we have made on this M-51 series of controls where the modifications made the unit a catalog item and a stock item, and we then gave it a different type number. But they are all brothers as far as the control unit is concerned. Their construction is identical. Their operation is identical, with the exception of the slight modifications which I mentioned.

Q. Have you any of the Mercoid literature which describes this Type M-53 that you have just referred to?

A. I am sorry. I just referred to the Type M-55.

Q. Is the M-55 shown on that?

A. Yes. This Bulletin No. 230 on the back page reads, under the main heading, "For Close Temperature Regulation, Types M-55, M-56 and M-57." The latter two were merely modifications of the M-55, with those long bi-metal coils, and the first paragraph of that reads:

"Type M-55 Mercoid control is of the same general construction as the furnace control illustrated and described on the opposite page,"—which, incidentally, is the Type M-51 furnace control,—"except that it is furnished with a longer bi-metal coil, which is very sen-

428 sitive to temperature changes."

Q. What is the date on the Bulletin 230?

A. That bulletin is dated March, 1933.

Mr. Moore: A photostat of Bulletin A-14 of The Mercoid Corporation entitled "Automatic Controls for Stokers and Forced Draft," which the witness has testified that he wrote, is introduced in evidence as DEFENDANT'S EXHIBIT K.

(The exhibit was so marked.)

Mr. Moore: And a copy, by way of photostat of the Mercoid 230, dated March, 1933, just referred to by the witness, is offered in evidence as DEFENDANT'S EXHIBIT K-1.

(The exhibit was so marked.)

Mr. Moore: Q. Did you get out any other bulletins or instruction sheets on the M-61?

A. Yes, there were subsequent bulletins printed.

Q. Do you know if there were any reprints made of this bulletin, A-14?

A. Yes, I believe there were.

Q. What was the next bulletin that you put out following the A-14 on the Type M-61?

A. That was loose leaf catalog bulletin No. 240.

Q. And about when was that published?

429 A. That was published in March, 1933.

Mr. Moore: A copy of Bulletin No. 240 of the Mercoid Corporation, March, 1933, is offered in evidence as DEFENDANT'S EXHIBIT L.

(The exhibit was so marked.)

Mr. Moore: Q. I show you a copy of Bulletin No. 240-B, dated June, 1935, and ask you if that is one of the later bulletins of the M-61?

A. Yes, that is a reprint of the former bulletin No. 240 and covers Mercoid stoker control type M-61.

Mr. Moore: A copy of Bulletin No. 240-B of the Mercoid Corporation, dated June, 1935, is offered in evidence as DEFENDANT'S EXHIBIT M.

(The exhibit was so marked.)

Mr. Moore: Q. I show you another publication of The Mercoid Corporation entitled "Installation Instructions, Form P-90," dated October, 1936, and ask you if that is one of the later publications of the M-61?

A. Yes, that is an installation instruction sheet applying to the Type M-61, M-62 and M-63 Mercoid stoker controls.

Q. What do you find on the back page of that bulletin?

A. On the back page of that bulletin are shown six wiring hook-ups, all related to stoker applications for
430 various types of boilers and the heading of the page reads, "General Applications and Wiring Diagrams."

Q. What does the Diagram No. 6 illustrate?

A. Diagram No. 6 illustrates the use of the Mercoid low voltage room heating thermostat in connection with the Type V2-3 relay on a steam boiler, wherein two Type M-61 controls are employed in identically the same manner as they are employed on Diagram No. 2 of Exhibit—do you have that marked as an exhibit?

Q. No, it is just an illustration.

A. Well, it is Diagram No. 2 of Bulletin A-14.

Q. Just take this pointer and point to it.

A. That is the center diagram, No. 2, which is shown on Bulletin A-14, wherein there are two controls in the stack and a combination pressure and low water control.

Diagram No. 6 in this bulletin Form P-90 is identical with this hook-up, with the exception that in place of using a line voltage type thermostat which directly handles the full load of the stoker motor, the diagram No. 6 in bulletin Form P-90 employs a low voltage Mercoid Sensatherm and a transformer relay to take the place of the line voltage thermostat. Otherwise, the diagrams are identical, and otherwise their operations are exactly the same as I previously explained.

431 Q. Then this diagram printed in October, 1936, is substantially the same as the diagram in your bulletin A-14 printed in 1931, is it not?

A. It is the same with the exception of a different type of thermostat being employed.

Q. Room thermostats are continually being improved, are they not, and changed in form slightly?

A. Yes, that is correct.

Mr. Moore: A copy of Mercoid installation instructions form P-90 is introduced in evidence as DEFENDANT'S EXHIBIT Y.

(The exhibit was so marked.)

Mr. Moore: Q. In 1935 did you get out any bulletins or advertising of a different type of fire maintenance control?

A. Yes. At that time we published a bulletin applying to the type TJV Mercoid Stokatherm and the M-11 Pyratherm, the two units being classified as the Mercoid Stokatherm control system, that is, they constituted part of the Mercoid Stokatherm control system, but they were operated in conjunction with one another.

Q. Did you write this bulletin?

A. Yes, I wrote that complete bulletin.

Q. Does it bear a date?

432 A. Yes; it is dated October, 1935, on the back page.

Q. What is this type M-11 Pyratherm illustrated on the cover?

A. That is a stack mounted type of bimetallic operated control unit which is employed in conjunction with the type TJV Stokatherm control, the two instruments coordinating together to perform the various functions that the system was designed for.

Q. Is this type of M-11 Pyratherm the same as the type of M-1 Pyratherm that you testified to?

A. No, there is a slight modification. The type M-1 Pyratherm, which was an oil burner safety control—and that is a unit that we had in 1929, at least—that control would close its circuit on a rise in temperature, whereas the type M-11 Pyratherm is arranged to close its circuit as the temperature drops. Otherwise they were identically the same.

Q. Is this type M-11 Pyratherm used in the same manner as the M-61?

A. No. It is used in the same manner only to the extent in connection with stoker applications it is generally installed in the stack, but the operation of that control was entirely different than the type M-61 control.

433 Q. Is there anything in that bulletin under Stoker Control Progress which will develop how this Mercoid Stokatherm control was developed after the use of this M-61?

434 A. Yes, there is a write-up there that was intended to show the progress of stoker controls over a period of years. I might read what it says. It may help to clear up a number of points which are at issue at present. It reads:

"Stoker Control Progress: For many years manually controlled chain grate or underfeed stokers were employed on industrial installations. As underfeed stokers were developed in smaller sizes to meet the requirements for industrial and commercial steam heating equipment, there was an increasing demand for controls to eliminate a great amount of the manual attention required, by automatically controlling the steam pressure. This demand was easily met by the adaptation of standard pressure limit controls.

"During the past few years small size stokers for domestic heating plants have been introduced and accepted in ever increasing volume. To meet the competition of other automatice heating equipment it was necessary to provide thermostatic room temperature regulation. A new problem arose, as it became necessary to provide means to keep the fire from going out during the long periods, especially in mild weather, when heat is not required and the thermostat remains in the off position.

435 Controls were not available, which had been designed especially to meet the many variable conditions encountered on domestic stoker installations. As a result it was necessary, at the time, to employ standard controls, developed for other applications, and modify them in the best possible manner to meet stoker requirements. Two methods were adopted; one operating the stoker at definitely timed intervals, and the other at fixed stack temperatures or boiler water temperatures.

Timers,—with or without a delay after the thermostat is satisfied,—fire the stoker at fixed intervals for a predetermined period. In mild weather, when for prolonged periods the thermostat does not call for heat, timers must be set to operate long enough to feed a sufficient amount of fuel to maintain combustion. During colder seasonal periods when the thermostat operates at short intervals this amount is greatly in excess of the quantity required

merely to maintain combustion, and is likely to cause overheating and a consequent waste of fuel. The operating period of the timer can be decreased to meet this condition and prevent overheating, however, when mild weather again prevails, the fire may then go out due to the fire maintaining period being too short. This seasonal changing of the timer setting results in unnecessary service
436 expense. Furthermore, ordinary types of timers employ no outfire feature or protection against the stocker's operating without fuel, or filling the combustion chamber with unburned fuel—either of which is a most annoying and undesirable condition.

"The other method of controlling stoker operation has been through the use of a stack control, which stops and starts the stoker at predetermined low stack temperatures. A somewhat similar method has been used on steam boilers, whereby the periods of operation of the stoker are determined through the temperature of the boiler water instead of through the temperature of the flue gases. As this method was adaptable only on steam installations, the stack type control became more popular. Stack controls usually employ metal elements which expand and contract with stack temperature changes and actuate the controls. It sometimes happens that these actuating elements are subjected to excessive temperatures and corrosive flue gases. Under such abnormal conditions these elements are apt to change and take a set or what is known as a metal 'growth.' This changes the original calibration of the control and results in overheating, consequent waste of fuel, and the expense of servicing to recali-
437 brate the control.

"Several years' intensive study of the needs of the stoker field has resulted in the development of a control system that fully meets all requirements. The Mercoid Stokatherm System based on a new principle of operation effectively combines the advantages of Time and Stack Controls, and at the same time overcomes the former weaknesses and disadvantages of these devices.

It is important that fire be maintained during the periods when the thermostat does not call for heat. Further, it is important that during this period the fire be maintained economically, so that excessive amounts of fuel are not consumed when heat is not required.

The Stokatherm system operates the stoker for only the shortest periods necessary to maintain a minimum

fire while the thermostat is in the 'off' position. The firing periods are not at definitely timed intervals or governed by fixed stack temperatures, but are automatically regulated to meet the variable conditions encountered on each installation. During approximately 80 percent of the heating season stokers operate in the fire maintaining controls. The economical, short operations of the Stokatherm not only result in a very decided fuel saving, but also insure against overheating. Should the fuel de-
438 livered to the stoker, have a higher or lower burning rate than that formerly used, the Stokatherm system automatically compensates for this and changes its firing period accordingly. Should the fuel become exhausted or the fire go out, the Stokatherm system automatically stops the stoker. This prevents running the stoker unnecessarily, and guards against filling the combustion chamber with unburned fuel."

Q. What is illustrated on page 3 of this bulletin?

A. On page 3 there is an illustration of the type M-11 Pyratherm.

Q. And this type M-11 Pyratherm is used in conjunction with the type TJV Stokatherm illustrated on page 2, is it not?

A. Did you say Sensatherm or Stokatherm?

Q. TJV Stokatherm.

A. Yes. The type M-11 is used in conjunction with the type TJV Stokatherm.

Q. I believe you were here yesterday when the expert for the plaintiff, Mr. Cook, gave his opinion as to the operation of the Mercoid Stokatherm control system, were you not?

A. Yes, I was present.

Q. And it was his opinion that this system in
439 fringed the claims of the Cross patent or that the claims in the Cross patent were found by him to be readable upon this combination of the Mercoid Stokatherm control system. Do you agree with his explanation of the operation of the M-11 Pyratherm when used in conjunction with the TJV Stokatherm?

A. No, I could not agree with Mr. Cook, because his interpretation of the operation of the type M-11 Pyratherm is not in accordance with what my experience has been in following that control not only through its development in our own laboratory and engineering tests which were conducted during the development, but I have

also had occasion to go out on many installations in the field and check the operation of this control and it does not function the way Mr. Cook has described its operation.

Q. Now, I believe there is an M-H Pyratherm in evidence as Defendant's Exhibit 43.

Mr. Stone: You mean Plaintiff's exhibit.

Mr. Moore: Plaintiff's Exhibit 43.

Q. Can you show the court wherein Mr. Cook's interpretation of the operation of this device is erroneous?

The Court: Suppose we take a recess until 2:00 o'clock?

Mr. Freeman: About how much longer are you
441 going to be, Mr. Moore? We have a witness who may come from out of town. Do you have any idea.

Mr. Moore: Wait a minute.

Mr. Freeman: With respect to this witness, before we become interested?

Mr. Moore: I am just half through with him.

Mr. Freeman: Then that means the rest of the day.

Mr. Moore: I am afraid so, on direct, or the first part of cross.

Mr. Freeman: We are safe then in not having any witnesses here until Monday?

Mr. Moore: I believe so, unless the plaintiff Mid Continent does not care to cross examine my witness.

Mr. Stone: No, we expect to cross-examine.

The Court: You still have another witness beyond this man, don't you?

Mr. Moore: I still have two witnesses besides Mr. Schultz.

The Court: How do they compare in length of time with Brother Schultz?

Mr. Moore: The two of them will take less on direct examination than Mr. Schultz.

The Court: You are safe for Monday then, aren't you, Mr. Freeman?

441 Mr. Freeman: I think we are safe for Monday. Thank you.

The Court: Two o'clock, gentlemen.

Whereupon a recess was taken until 2:00 o'clock p. m.

442 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company
*vs.*
The Mercoid Corporation. } Before Igoe, J.

Thursday, September 11, 1941,
2:00 o'clock p. m.

Met pursuant to recess.

Present:

Messrs. Stone, Bair, Freeman, Moore.

ALBERT N. SCHULTZ, a witness on behalf of the defendant, having been heretofore duly sworn, resumed the stand and testified further as follows:

*Direct Examination (Resumed)* by Mr. Moore.

Q. Mr. Schultz, just before the court adjourned we were referring to the Mercoid Stokatherm control system, Mercoid Bulletin No. 241, and I believe you were reading from the description of the stoker control progress as set forth on page 2 of the bulletin, and also had stated that you had heard the testimony of Mr. Cook, the expert for the plaintiff, in which he found the combination of the M-11 Pyratherm and the TJV Stokatherm of the Mercoid Stokatherm control system was to be readable upon the claims of the Cross patent in suit, and when I asked you if you agreed with his explanation of the operation of the two instruments you said you did not. Is that correct?

A. Yes, that is correct.

Q. Did I ask you to demonstrate to the court by using the M-11 Pyratherm and the type TJV Stokatherm how they were used in combination to maintain a fire?

A. No, I do not believe you asked me that question.

Q. Well, will you very briefly, by taking the M-11 Pyratherm and the TJV Stokatherm, Plaintiff's Exhibits 43 and 42, explain visually to the court just as short you can how these two instruments are employed to maintain a fire?

A. This type TJV Stokatherm consists essentially of a transformer relay and of a small synchronous operated motor-timer unit. By a synchronous motor timer unit I mean that it is a small electric motor which is very
444 similar to that motor which your would find in an ordinary kitchen clock.

The motor has a rotor that operates from the frequency of the power supply, and it operates at a definite number of rotations per minute which is fixed by the power companies in establishing the frequencies of their lines.

Now in this control system which is made up of this TJV panel unit and the M-11 Pyratherm and a room thermostat and a boiler limit control or furnace limit control, there is a coordination of the control action which gives one function of maintaining the fire when the thermostat is in the off position for a long period of time. There are other actions in this TJV which are primarily that it will, in the event the fire goes out, stop the stoker, and it also will compensate for variations which occur on normal stoker systems. That is, there are variations in the different types of boilers and furnaces that stokers go into. There are variations in the type of coal that is burned, not only on the different installations, but variations in the coal that is delivered to any particular installation. That makes a difference in the operation of the control.

There are also variations that occur in the air
445 within the basement.

Those variations as well as the variations in the prevailing wind conditions, which in turn affect the draft of the furnace or boiler, all in turn affect this control system, and it is so designed that it automatically compensates for those variations by changing its firing period.

Now, on an actual installation we will assume that a thermostat has been called for heat. When that occurs and the thermostat closes its circuit that transformer relay has a secondary or movable coil which moves to the right and in so doing closes the main motor switch, which is at the bottom of the mechanism, and that switch in turn is connected with the stoker.

Whenever this switch is closed the stoker will operate.

Now, as the thermostat continues to call for heat and the stoker continues to operate, there is a rise in the temperature in the stack due to the fact that the fire bed continuously builds up to a maximum point. As that fire bed

builds up the stack temperature accordingly rises and eventually reaches a maximum point.

I will now change from that control over to the M-11 Pyratherm which operates as a result of the changes 446 of temperature in the stack.

This unit, which has a thermostatic bimetal coil, responds to the increase in stack temperatures as the stoker operates, and the bimetallic coil moves and operates a mechanism and the circuit is open. As long as the stack temperature continues to increase, and when it finally reaches its maximum, as long as it stays at that maximum the switch circuit remains open.

Now, the mechanism of this M-11 Pyratherm is such that upon a change in temperature the bimetallic unit operates if the change in temperature is a downward change. The first movement or the first drop in temperature causes a movement of the bimetallic coil which closes the circuit.

Now, we will assume that the stoker has been firing and it is nothing unusual for a stoker installation to reach a temperature of 750 or 800 degrees, and for the moment I will drop this control, which on a dropping temperature is variable on each installation. It cannot be predetermined because the characteristics of the bimetallic unit are not a constant; that is, it is a curve and different bimetals have different characteristics. At a high temperature it will take a fixed number of degrees to close this circuit, 447 and at a low temperature will take an entirely different number of degrees to cause sufficient movement of the bimetal to close this circuit. But upon a drop in temperature at some point where that temperature is dropping this circuit will close and when it closes it does two things in the Stokatherm unit. It energizes a small relay which is at the right and causes the plunger to rise. At the same time it energizes this small synchronous motor which in turn starts driving a planetary gear train, and by planetary gear train I mean that there is normally in that unit one large gear with the other gears so arranged that if the large gear is locked in position, then the power transmitted by the small synchronous motor causes the other gears to rotate and they are so geared that they rotate up around the other gear, just the same as a planetary system.

That rotation of the synchronous motor in turn causes a rotation of the gears, causes the internal mechanism to move up and after it has moved so far, which is a time

factor determined by the setting of the unit, then the small switch to the right of the mechanism closes. That switch is connected across the secondary relay circuit and causes the relay to move, closing the motor switch circuit, and the stoker then operates.

448 Now, with the stoker operating there is going to be a rise in temperature of the stack. However, that condition that I have just explained is one that will have to be further explained to this extent: That we assumed, to start with, that the stack temperature had gone to 850 degrees. That is the assumption of what might have occurred on one installation during one period of operation when the thermostat was calling for heat.

The next operation on that same installation might only take the temperature to 500 degrees. If it were a shorter operation by the thermostat, or if it were a longer operation by the thermostat, it might have gone to the 950 degrees or 1000 degrees. But at any rate, regardless of the temperature prevailing in the stack when the thermostat shuts off, the first downward movement of the temperature causes this unit, the M-11 Pyratherm, to start in motion the timing mechanism of this control, and we will assume that the TJV is set on its timing mechanism to a half hour.

Now, during that half hour period after the M-11 Pyratherm closed its circuit, the stack temperature continues to drop, but it cannot be predetermined as to the temperature at which it is going to reach when the stoker again fires.

449 On an average installation where the stack temperature had gone to, say, 850 degrees, it probably would drop to within the neighborhood of 350, maybe 400 degrees, within the half hour period, when the stoker would again fire, and as soon as it started firing, due to the high fire bed still prevailing within the combustion chamber, it would only be a relatively short period of time, probably ten or fifteen seconds, before there would be a rise in temperature in the stack.

Now, the M-11 Pyratherm is so designed that it not only closes its circuit on the first drop in temperature, but regardless of how low that stack temperature then goes, just as soon as the temperature starts rising it immediately opens the circuit. So had it gone down to 350 degrees on that first operation, as soon as the stoker started oper-

ating the M-11 would then open its circuit and in opening its circuit it immediately stops the stoker.

Now when the stoker stopped the stack temperature would again start to decrease. On a decrease in temperature, which, again, cannot be predetermined, because, not knowing where this operation is going to start, it cannot be determined what degrees this bimetallic element is going to function on to close this circuit, but at 450 some lower temperature it will close, and within half an hour's period the TJV unit will again start the stoker and the rate at which the stack temperature then rises depends on the condition of the fire. If the fire is still good, it will only take a short period of time, probably half a minute, maybe three quarters of a minute or a minute, before there is a rise in stack temperature, and the M-11 Pyratherm will again stop the stoker by opening the circuit to the relay.

Again the stack temperature will start dropping and again the M-11 Pyratherm will come into operation to in turn operate the timer movement, and within a half hour period again test out the condition of that fire.

Eventually that sequence of operation will work its way down to a point where the fire is at the minimum condition where it can be maintained without going out. That condition, however, cannot be predetermined because it varies on the same installation from day to day. It varies on the factors which I mentioned of what grade of fuel is employed, what the wind conditions are, what the basement temperature is, and, if the same set of controls, without any changes whatsoever, are put on another installation the temperatures at which it operates would be en-
451 tirely different. In other words, this control is one,— that is the M-11,—a control unit that has no adjustments provided for determining in advance the temperatures at which this unit is going to operate. It has the function of automatically finding its own level at which it is going to maintain a fire.

Now I question the statements made by Mr. Cook yesterday in his testimony, because he stated that the M-11 Pyratherm does operate at predetermined temperatures. It has been customary in general practice in the control field for many years to talk about instruments that do operate on predetermined temperatures.

Take, for example, a room thermostat. It is provided with an adjustment. In Mercoid the standard range is

adjustable 56 to 80 degrees. But that instrument can be set for a definite temperature which, if if were in your home you could determine in advance what temperature you wanted to set that instrument at, and normally it would be 70 degrees. You would set the instrument to operate at 70 degrees, and whenever 70 degrees were reached, the instrument would function.

If it were a hot water control on your boiler you could determine in advance or predetermine what
452 temperatures you wanted, and set the control to operate accordingly.

If it is on a warm air furnace you can determine in advance or predetermine the temperatures, the limits of temperature that you want in your warm air furnace, and set the control accordingly, but you cannot with an M-H Pyratherm determine in advance where that control is going to operate, because it all depends upon the conditions of the installation, the control seeking its own level, and the operation of the unit is accordingly.

The Court: That is the main difference between you and Mr. Cook?

The Witness: That is the main difference.

The Court: All right, let's get on to something else.

Mr. Moore: Q. I call your attention to the illustrations on page 4 of this bulletin 241, under the title, "Additional Controls Required to Complete the Mercoid-Stokatherm System." Will you just briefly indicate what each of those controls is?

A. May I have a copy of that bulletin, please?

(A copy of the bulletin was handed to witness.)

On the left hand column the first instrument is the Mercoid Sensatherm, which is the room temperature
453 regulating thermostat.

Q. That is what would be referred to as a room thermostat?

A. Yes, that is correct.

The next instrument shown is the type DA-31 Mercoid steam control, which is a control for use in connection with steam boilers to limit the pressure within the boiler.

Q. Is that the same kind of control as the original figure 31 shown on the bulletin of The Mercoid Corporation E-1, 1923?

A. It is substantially the same control; that is, it employs the Bourdon tube and the Mercoid switch. It is an improvement over the former figure 31 in that it has

a calibrated dial and double outside adjustments. The purpose of the instrument is the same.

Q. What is the next one?

A. The next one is the type M-51 warm air furnace control for limiting temperatures of warm air furnaces.

Q. That is the one you have already testified to?

A. Yes, that is correct.

Q. What is the next?

A. In the right column the first instrument shown is the type DA-36 Mercoid immersion hot water control.

Q. And is that a similar control to the original 454 figure 36 you have referred to in the early bulletin E-1 of 1923?

A. It is substantially the same, however, having the differences that I mentioned in the DA-31 steam control; that is a calibrated dial and outside double adjustments.

The next instrument is the surface type hot water control known as the figure 35 Risertherm. It is a limit control for hot water systems.

And the last instrument shown is a Mercoid combined pressure and low water control type DA-71. That instrument is for use on steam boilers and combines a low water feature with the pressure control feature.

Q. I believe you stated that you wrote this bulletin No. 241, dated October, 1935.

A. Yes, I wrote that complete bulletin.

Q. Where did this bulletin come from?

A. That bulletin came from our company files.

Mr. Moore: Bulletin No. 241, entitled, "Mercoid Stokatherm Control System," dated October, 1935, is offered in evidence as DEFENDANT'S EXHIBIT O.

(The exhibit was so marked.)

Mr. Moore: Q. Did you get out any more bulletins or installation instructions on the type M-61 after the issuance of this bulletin 241 in October, 1935?

455 A. Yes, I believe there was one further instruction bulletin.

Q. I show you installation instruction, form P-90, dated September, 1937, and ask you if that is the instrument you refer to?

A. Yes.

Mr. Stone: We will concede that bulletin.

Mr. Moore: What?

Mr. Stone: We will concede that the bulletin was gotten out.

Mr. Moore: Q. What is the last installation instructions on the type M-61 that you were able to find?

A. I am not absolutely certain, but I believe there was one further installation instruction bulletin after this form P-90.

Q. Have there been any reprints of this form P-90?

A. There may have been one further reprint of that. I am not absolutely certain on that point.

Mr. Moore: A copy of Mercoid installation instructions form P-90, dated September, 1937, is offered in evidence as DEFENDANT'S EXHIBIT P.

(The exhibit was so marked.)

Mr. Moore: Q. Can you produce a catalog of The Mercoid Corporation for the year 1940?

456 A. Yes, I can.

Mr. Stone: We will concede, that Mr. Moore.

Mr. Moore: Q. What do you find illustrated and referred to on page 18 of this catalog of 1940?

A. That page illustrates and describes the type M-51 Mercoid warm air limit controls.

Q. That is the type M-51 you have been testifying to recently, is it?

A. Yes, that is correct.

Q. What do you find illustrated on page 20?

A. Page 20 illustrates and describes the type DA-36 and type DA-37 immersion hot water controls.

Q. Are they the same as the original type 36 and type 37 referred to in the Mercoid catalog E-1 of 1923?

A. They are substantially the same, the difference being that the DA-36 and DA-37 controls have been improved to the extent of being provided with calibrated temperature dials and double outside adjustments. Otherwise their principle of operation is the same.

Q. What do you find on page 22?

A. Page 22 illustrates and describes the number 848 model of temperature controls, both the remote stem type and the direct connection type.

Q. Is that the same 848 that was referred to in your testimony as shown in the Mercoid bulletin of 1924?

457 A. Yes, they are identically the same instruments.

Q. What do you find on page 38?

A. Page 38 illustrates and describes the Mercoid coal stoker controls. The first instrument shown is the type TV-2 Mercoid Stok-A-Timer, which is a time operated stoker control for maintaining fire.

The next instrument shown is the type M-63-SW out fire stoker control, which is of the same general construction as the M-51, the furnace control, except that the switch is reversed and the purpose of this instrument is to stop the stoker in the event the fire goes out.

Below that is shown the type JMV Mercoid Stokatherm, which is a stoker control for maintaining the fire, and provides out fire features as well as compensation for variations in fuel supply to the stoker.

There is also shown a type T-2 Mercoid Stok-A-Timer, which is a stoker timer unit for industrial buildings.

Q. Now is this type JVM Stokatherm the same as referred to in the plaintiff's testimony yesterday?

A. I believe you are referring to type JMV instead of JVM.

Q. Well, do you find this type on that bulletin?

458 A. Yes, that is the type JMV Stokatherm.

Q. And that is Plaintiff's Exhibit 44, is it?

A. Yes, that is correct.

Mr. Moore: Photostats of the first page of catalog No. 400, effective February 11, 1940, pages 18, 29, 22 and 38 are offered in evidence as DEFENDANT'S EXHIBIT Q.

(The exhibit was so marked.)

Mr. Moore: Q. By the way, while you have that most recent catalog in your hand, can you state approximately how many different controls are illustrated and described therein? Have you ever counted them?

A. I do not believe I have, because there are a lot of modifications mentioned in that catalog of each type of instrument. If you were to sum those up I am afraid it would run into a good many hundred different types.

Q. I believe the plaintiff introduced in evidence yesterday a copy of the Mercoid bulletin 242, Mercoid Stokatherm, Plaintiff's Exhibit 19. Is this bulletin a description and illustration of the type JMV Stokatherm?

A. Yes, that is correct.

Q. And that is the one to which the physical exhibit corresponds, Plaintiff's Exhibit 44?

A. Yes, that is the instrument.

Q. Did you hear Mr. Cook, the expert for the

459 plaintiff, give his opinion as to the construction and operation of this Stokatherm Type JMV yesterday?

A. Yes, I did.

Q. Do you, with your knowledge, practical and theo-

retical, agree with his description of the construction and operation of this JMV?

A. No, I do not.

Q. What is the main point of difference in the two opinions?

A. The main point of difference between Mr. Cook's opinion and my opinion regarding the operation of the JMV is substantially the same difference which I outlined as applying to the JMV Stokatherm and the M-11 Pyratherm. That is, the type JMV Stokatherm does not operate at predetermined temperatures, and for exactly the same reasons that I previously mentioned on the M-11.

Q. Your opinion is also backed up by practical experience with this instrument in the trade, is it?

A. It is backed up by practical experience and conducting tests on the unit in our laboratory during the development stages, conducting tests on production units after production had started through the factory, and it is further backed up by cooperation with dealers after the instruments were placed on the market. It is nothing 460 unusual when a new instrument is introduced to the trade that in some cases the dealer may not thoroughly understand the control unit and feels that it is not doing what we have claimed for the instrument, and in that case the problem is referred to our engineering department, and I have in cooperation with other engineers in the plant gone into the field to determine why the instruments were not doing what they claimed they would do, and in correcting actual installations have gained experience in the field itself.

Q. I believe Mr. Cook stated yesterday that this type JMV was a more aggravated infringement of the Cross system patent than the other type which employed the M-11 Pyratherm and the Stokatherm. Do you remember that?

A. Yes, I do recall him saying that.

Q. Do you agree with him on that statement?

A. No, I cannot agree with him to the extent that either the TJV system or the JMV system in any way operates in accordance with the claims of the Cross patent.

Q. Now you still maintain that the same difference of opinion exists between you and the plaintiff's expert on this later JMV and the earlier Stokatherm system as explained to the court with the instrument, is that right?

The Court: He is asking you if you have changed
461 your opinion since you stated it a few minutes ago?

The Witness: Pardon me?

The Court: Q. Have you changed your opinion since you stated it a few minutes ago, that you do not agree with Mr. Cook?

A. No, I have not.

The Court: That is the answer to the question.

Mr. Moore: Q. You could take a half hour in pointing out the differences?

The Court: He is not going to talk a half hour. Let us get to another question.

Mr. Moore: You could take a half hour.

The Court: He said his opinion is the same as it was about the other attachment. Let us get on to something else.

Mr. Moore: Q. I will not ask you any more questions in regard to the differences of opinion between the experts.

Do you know whether or not any of your competitors placed on the market a control similar to the M-61 after your bulletin A-14 was published?

A. Yes, I am sure they did.

Q. I show you here a bulletin of the Detroit Lubricator Company, bulletin No. 62, dated September 30,
462 1933, and ask you if that is one that you had in mind?

A. Yes, that is one of the bulletins.

Mr. Freeman: This is still not directed against Minneapolis-Honeywell?

Mr. Moore: No, there are no charges directed against Minneapolis-Honeywell, the unwilling plaintiff in this case. This literature of the Detroit Lubricator Company and some literature of the Minneapolis-Honeywell Regulator Company is merely being introduced to show what they had on the market and how these companies displayed the patent notice under the Cross patent in suit.

Q. Will you please refer to figure 2 of that bulletin? Page 2, I mean. Do you find a patent notice there?

A. Yes, there is a patent notice.

Q. Will you please read it?

A. It reads: "Hold fire controls carry with them a license to use a system of preventing extinguishment of the fire when operating under low heat requirement con-

sitions as covered by patent Nos. 1,758,146 and 1,758,147 and or 1,882,341 as the case may be.

Q. Now refer to page 7. Is there a patent notice on that page?

A. Yes, there is.

Q. Is it the same as the other?

463 A. The only difference is that the first one started, "Hold fire control," whereas the second patent notice reads, "This control." To the rest of the extent they are the same.

Q. And what is this control described on that page?

A. That described the number 275 hold fire control, the number 274 hold fire control, and the number 270 models MH-1 and MH-2 hold fire controls.

Mr. Stone: What is the date of that bulletin, Mr. Counsel?

Mr. Moore: September 30, 1933.

Mr. Stone: Your Honor, I wish to interpose an objection to this line of testimony and to the introduction of this circular that the witness is now examining, on the ground that its only purpose is to show conduct of the plaintiff in exploiting its patent prior to the filing date of the Kansas City suit, and that the conduct as to what we were doing then is res adjudicata by virtue of that suit.

The Court: Your objection is overruled.

Mr. Moore: Q. I call your attention to page 9 of this catalog. What is the heading at the top of that?

A. That heading reads "Out-Fire Controls."

Q. Do you find any patent notice in connection with 464 the out fire controls displayed thereon?

A. No, there is no patent notice on that page.

Q. Where did this catalog come from?

A. This catalog came from my own personal files.

Q. And it has been in your custody since you first obtained it until you brought it in here?

A. Yes, that is correct.

Mr. Moore: Photostat of the front page of Detroit Lubricator Company bulletin No. 62, dated September 30, 1933, and pages 2, 7, 8 and 9 are introduced in evidence as DEFENDANT'S EXHIBIT R.

(The exhibit was so marked.)

Mr. Stone: I wish to object to the introduction of Plaintiff's Exhibit R on the additional ground that it is not proven.

The Court: On what?

Mr. Stone: It is not proven.

The Court: What do you mean by that? What do you mean by your statement that it is not proved?

Mr. Stone: The witness has not identified the fact that it was gotten from the Detroit Lubricator Company.

The Court: Do you wish to pursue that?

Mr. Moore: I think the document speaks for itself.

The Court: You can ask the witness how he got it.

465 Mr. Moore: Q. Do you know how you came into possession of that?

A. Yes. I have been on the Detroit Lubricator Company mailing list for many, many years. In fact, prior to the Detroit Lubricator Company the accessory division of the American Radiator Company handled Mercoid controls, and that goes back to at least—

The Court: Q. How did you come into possession of this document which has been introduced and marked Defendant's Exhibit R?

A. It was regularly mailed to me by the Detroit Regulator Company and placed in my personal files.

Q. It came to you in the regular course of business?

A. That came to me in the regular course of business

The Court: All right. Objection overruled.

Mr. Moore: Q. I show you another publication of oil burner accessories of the Detroit Lubricator Company and ask you if you obtained that in the same manner as you did the other bulletin?

A. Yes, that was also sent to me in the regular course of business.

Q. Now, I call your attention to a sheet number 101-L, dated September 15, 1937.

A. Sheet 101-L?

466 Q. Sheet 101-L.

A. Yes, I have that.

Q. I call your attention to page 3 thereof. Do you find a patent notice appearing under, "Stoker Control Switches"?

A. Yes, there is a patent notice.

Q. Will you please read it?

A. That notice reads: "'Stand-by' controls carry with them a license to use a system of preventing extinguishment of the fire when operating under low heat requirement conditions as covered by patent numbers 1,758,146

and 1,758,147 and or 1,882,341 as the case may be, ('Stand-by' registered U. S. Patent Office.)"

Q. This sheet No. 101-L has been in your possession, has it, ever since you received it from the Detroit Lubricator Company?

A. Yes, it has.

Mr. Moore: I offer photostats of the front page and page 3 of the Detroit Lubricator Company sheet No. 101-L, dated September 15, 1937, in evidence as DEFENDANT'S EXHIBIT S.

(The exhibit was so marked.)

Mr. Moore: Q. Have you obtained any catalogs of Minneapolis-Honeywell Regulator Company issued 467 during 1933?

A. Yes, I have.

Q. I show you here a complete condensed catalog and price list of Minneapolis-Honeywell Regulator Company effective March 30, 1933, and ask you if you know where that came from.

A. That catalog came from my own personal files.

Q. How did it get in your own personal files?

A. In some cases the Minneapolis-Honeywell catalogs have been mailed to me from their branch offices

Mr. Stone: I will admit this one, your Honor.

Mr. Moore: Q. I call your attention to page 12 of this catalog and to the illustration of type S stoker switch. Will you please read the patent notice under the illustration of this article?

A. That reads: "Patent Notice: These stoker switches carry with them a license to use this system to prevent extinguishment of the fire when operating under low heat requirement conditions as covered by patent No. 1,758,146."

Q. And that is the Cross patent in suit, I believe, Cross patent No. 1,758,146?

A. Yes.

Q. Now will you please look on page 16. I believe you find a patent notice there. Will you please read the 468 statement appearing under the patent notice?

A. That reads: "Minneapolis-Honeywell and Time-O-Stat Controls and Con-Tac-Tor mercury switches are manufactured and sold under the following patents either owned by Minneapolis-Honeywell Regulator Company or under which Minneapolis-Honeywell Regulator

Company is licensed. Other U. S. and foreign patents are pending."

Q. Could you just state offhand about the number of patents that appear in these six columns?

A. Oh, roughly I would say around 250.

Q. Now I notice that some of those patents have an asterisk after them and then the asterisk is explained by the statement appearing below the patents. Will you please read what that statement is?

A. That reads: "The right to use the Systems protected by the following patents is only granted to the user by Minneapolis-Honeywell Regulator Company when the particular controls shown below are purchased from Minneapolis-Honeywell Regulator Company and used in the systems."

Q. Now I see there three columns; Patent Number, System, and Controls. Do you find any statement there made in regard to any patent systems for maintaining a stoker fire?

469 A. Yes, there is patent No. 1,758,146 applying to a system of maintaining stoker fire and whereon the control listed is stoker switches. There is also a patent No. 1,758,147 applying to a system of maintaining stoker fire wherein the controls listed are hold fire controls.

Q. And where has this been since you received it?

A. That has been in my own personal custody.

Mr. Moore: Photostats of the cover page, page 12 and page 16 of the condensed complete catalog and price list of Minneapolis-Honeywell Regulator Company, dated March 30, 1933, is offered in evidence as DEFENDANT'S EXHIBIT T.

(The exhibit was so marked.)

Q. Can you produce a current catalog of Minneapolis-Honeywell Regulator Company, one issued in 1940?

A. Yes, I can.

Mr. Stone: I will stipulate that one.

Mr. Moore: Q. Will you please turn to page 17, and under the heading "Stoker Switches" you will notice an illustration at the upper left hand corner and a patent notice in the lower right hand corner of that subdivision. Will you please read what that patent notice states?

A. That reads: "Patent Notice: These stoker switches carry with them a license to use this system of preventing

extinguishment of the fire when operating under low heat requirement conditions as covered by patent No. 1,758,146.

Q. Now will you please turn to page 40. That is headed, "Patent Notice," is it not?

A. That is correct.

Q. Will you please read the patent notice appearing above the list of patents?

A. It reads: "Minneapolis-Honeywell controls, Time-O-Stat controls and Con-Tac-Tor mercury switches and National Regulator controls are manufactured and sold under the following patents either owned by Minneapolis-Honeywell Regulator Company or under which Minneapolis-Honeywell Regulator Company is licensed. Other U. S. and foreign patents are pending."

Q. There are nine columns listing patents, possibly forty or fifty patents in each column, are there not?

A. Yes, that is correct.

Q. I notice there are asterisks after certain numbers of patents and there is a footnote below the columns of patents describing the asterisks. Will you please read what that statement says?

A. That reads: "The right to use the systems protected by the following patents is only granted to the user by Minneapolis-Honeywell Regulator Company when all the particular controls shown below are purchased from Minneapolis-Honeywell Regulator Company and used in the systems."

Q. Now, there are lists of patent systems and controls below that notice. Do you find any relating to maintaining stoker fire?

A. Yes, there is patent No. 1,758,146 relating to systems of maintaining stoker fire and the controls referred to are stoker switches. There is also patent No. 1,758,147 relating to systems of maintaining stoker fire and the controls referred to are hold fire controls.

Mr. Moore: The photostat of the outside cover, page 17 and page 40 of the Minneapolis-Honeywell automatic control condensed catalog of 1940 is introduced in evidence as DEFENDANT'S EXHIBIT U.

(The exhibit was so marked.)

Mr. Moore: Q. I believe you stated that the Penn Electric Switch Company had entered the control field about the time Minneapolis-Honeywell had absorbed the Time-O-

Stat. Can you produce any of the Penn Electric Switch Company's literature relating to hold fire switches?

A. Yes, I can.

Q. I show you here a piece of literature marked, "Bulletin No. 56," dated 6 8 33, by the Penn Electric Switch Company, and ask you if that is the piece of literature
472 you had in mind.

Mr. Stone: I will admit that.

Mr. Moore: What is that?

Mr. Stone: I will admit that.

The Witness: A. Yes.

Mr. Freeman: You are admitting for the plaintiff Mid-Continent?

Mr. Stone: I am not admitting it in evidence.

Mr. Freeman: For the plaintiff Mid-Continent?

Mr. Stone: Yes.

The Witness: A. Yes, this is the bulletin I referred to.

Mr. Moore: Q. On page 1 what instrument is illustrated there?

A. That illustrates the Penn stoker control type J, Model JHF, which is a dual hold fire switch with out fire hook-up.

Q. Does that have a bimetallic helix.

A. Yes, that instrument does have a bimetallic helix.

Q. Is it illustrated?

A. The helix is shown in the illustration in the broken away section of the protecting well over the bimetallic coil.

Q. Did you ever see one of these switches?

473 A. Yes, I have.

Mr. Moore: A photostat of Penn Electric Switch Bulletin No. 56, dated 6 8 33, and the pages 1 and 2 is offered in evidence as DEFENDANT'S EXHIBIT V.

(The exhibit was so marked.)

Mr. Moore: Q. Have you had occasion to read the Cross patent in suit, No. 1,758,146, granted on May 13, 1930, upon an application filed November 11, 1926?

A. Yes, I have read that patent.

Q. Did you understand the specifications when you first read it in connection with the Patent Office drawings?

A. Well, there was one part of the specifications which was not clear, and that was the specification on page 2 in the left hand column, lines 22 to about 37.

Q. Why did you not understand it?

A. Well, I will first read what it says:

"To prevent the fire from being entirely extinguished

during the periods when the system is shut off for any considerable length of time, a thermo-couple 38, shown in Figs. 1 and 2, is positioned in the combustion space of the furnace, just above the fire zone; and this thermo-couple is set at a predetermined temperature which temperature is regulated to operate the fuel feed and force drafts sufficiently to prevent total extinguishment of the fire. The variations in temperature acting upon the thermo-
474 couple function a diaphragm valve 29 to bring a contacting surface 40 in engagement with the contact point 41 when the temperature in the furnace is reduced to a predetermined point."

Now that was not clear in reading the specifications, because it refers to a thermo-couple operating a diaphragm valve, and when tying that description in with the drawing of the parts shown as these were in the patent drawing Fig. 2, it just did not tie together. In other words, the part 38 which was referred to as a thermo-couple in the accepted sense of a thermo-couple from the engineering standpoint could not be a part which would function a diaphragm valve, the diaphragm valve being referred to as 39, and in the drawing that is not indicated as a valve. It shows what would appear to be a diaphragm.

Q. Have you ever had occasion to read this other Cross patent, 1,758,147, referred to in these catalogs?

A. Yes, I have read that patent.

Q. Did that simplify your understanding any?

A. It did, because on page 2 of that patent it reads:

"To supplement this control there is a fluid operated thermostat 31 positioned in the boiler where it assumes the temperature of the water."

475 By referring to the illustration in question it shows the same general construction of the unit, the control unit, as was shown in patent No. 1,758,146, but the fact that it mentioned that there is a fluid operated thermostat positioned in the boiler, that in itself cleared up the specifications, to my mind, because then you could conceive of the thermostat as being a thermostat with a bulb containing a volatile liquid and the expansion of the volatile liquid acting on a diaphragm, the diaphragm in turn transmitting the power and movement to the contacts for opening and closing the circuit.

Mr. Moore: A soft copy of the Cross patent, 1,758,147, just referred to by the witness, is offered in evidence as

DEFENDANT'S EXHIBIT V-1. A copy of that is in that book of patents, your Honor, that I gave you.

(The exhibit was so marked.)

Mr. Moore: Q. With your understanding of the Cross patent, from your reading and inspecting the specification and drawings of the later Cross patent, will you very briefly give your understanding of what this Cross patent includes? The pointer is there. Make it very brief.

A. Well, briefly—

Mr. Stone: Your Honor, I wish to state at this point
476 that the scope of the Cross patent including its validity was established in the Kansas City suit against this very defendant, and while I see no reason why the expert should not go into the patent for the purpose of comparing it with the systems that it is here charged to infringe, the scope of the patent was established by the Honorable Judge Reeves, and they excepted to its scope. It seems to me the best way of determining what the scope is, so far as this defendant is concerned, is to examine into what Judge Reeves thought about it.

477 Mr. Moore: May is please your Honor, their expert testified to his opinion as to how this patent operated, and I believe I am entitled to the same privilege.

The Court: That is the only reason you are entitled to it, because he opened the door, and now you are in. Go ahead. Objection overruled.

Mr. Moore: Q. Make it very brief.

A. Briefly, your Honor, this patent covers a heating system, that is, with a motor driven stoker unit firing into a combustion chamber, the heat from the combustion chamber passing up into a heat exchanger which has a motor driven circulating fan for blowing the warm air from the heat exchanger through ducts, which are shown as 10, to various rooms in the residence, all of which is covered by Fig. 1.

The most important thing in question at the present time is the control system which is shown in Fig. 1.

The Court: Is the what?

The Witness: Is the control system. I am just making this brief.

The Court: All right, go ahead.

The Witness: And the control system, as shown in Fig.
478 1, consists of a room thermostat shown above the floor line but not numbered and which is connected by wires to the stoker motor No. 29, wires also being shown as connecting to a combustion thermostat located in the com-

bustion space, that is, having a bulb located in the combustion space directly above the fire.

Now, referring to the wiring diagram, which is shown in Fig. 2, the controls in this patent are made up—or the system is made up of first a room thermostat which is shown as No. 22, a relay which is shown as 23, and a stoker motor shown as No. 29; a combustion thermostat comprised of No. 38, 39, and contacts 40 and 41; also a circulating fan motor shown as No. 17.

The power lines are shown at the top of Fig. 2 and power is supplied to the controlling equipment through line No. 30 and line No. 28.

Now, when the room thermostat calls for heat, that is No. 22, through a battery circuit it energizes relay No. 23 which then closes across contacts Nos. 24 and 25. That then permits current to flow through line 30 through the relay contacts 24 and 25, down through line 26-A to motor 29; from motor 29 back to the other side of the line, or No. 28. At the same time, it permits current to flow through line 26 to the circulating fan motor No. 17, then through line 28-A to line 28 so that the circulating motor is also across the line and operating.

Now, when the thermostat is satisfied, the circuit is open at the relay contacts 24 and 25, and both the circulating fan motor 17 and the stoker motor 29 stop, but on a drop in temperature in the combustion space, the combustion control having the bulb 38 filed with a volatile liquid, then contracts and in turn closes contacts 40 and 41, which completes the circuit to the stoker motor through line 30 through the contacts 40 and 41, through 42 to stoker motor 29 and then through 28 so that the stoker motor operates and at the same time current is fed through line 26-B to the circulating motor 17 back through line 28 to the power supply.

480 Q. Did the Mercoid or Federal Gauge have on the market a room thermostat in 1923?

A. Yes, at that time the figure 21, Mercoid room thermostat, was available.

Q. I believe you testified that Mercoid Bulletin E-1 of 1925 showed such a thermostat, and also showed a control employing a tube containing a volatile liquid which would operate a switch to open and close, did you not?

A. Yes, that is correct. We had the room thermostat and also the figure 37 back angle type immersion control which had a bulb similar to the bulb 38 which was filled with a volatile liquid. This figure 37 control had a Bourdon tube

power element, whereas the power element shown in figure 2 of the Cross patent as part 39 is a diaphragm.

The functioning of the controls, however, would be similar in that they would obtain the pressure in the power element for actuating the control from the boiling of the volatile liquid within the bulb element.

Q. Then that is very similar to the control shown in the drawing but very indefinitely described in the specification of the Cross patent in suit?

A. Yes, that is correct. This is different to the extent of the type of switch employed and the type of power 481 element employed.

Q. Now, I believe you have shown also that this same type of pressure responsive Mercoid switch as shown in 1923 you still have on the market, is that correct?

A. Yes, that is correct.

The Court: Let me ask this witness a couple of questions:

Q. Which of the articles that you have pointed out upon the chart over there showing the Cross patent, is a system patent? Let us take, for instance, a thermostat. Which articles, such as a theromstat or similar articles, are separately patented? Does the thermostat carry a patent?

A. Yes, in the manufacture of controls you obtain a patent on the individual control unit.

Q. Well, each one of them is separately patented?

A. In the case of the Mercoid figure 37 control, that has patents applying to that control. The thermostat would have patents applying to it.

Q. Which ever company that system may be made it up of articles obtained from several different companies, but each of the articles necessary to the formation of a system would carry with it a separate patent?

A. It is my understanding of the Cross patent that 482 that is a system patent and that it does not patent any particular control units.

Q. That is what I understand. For instance, the Honeywell Company; each of their articles included in that system are all separately patented?

A. That would be correct.

Q. The same is true of this Penn Stoker control, whatever article of theirs went into the system would be a separately patented article, so far as they are concerned?

A. Yes, that is correct, but in the Cross patent, that

was a sytem patent and they were not manufacturing the controls and did not have any patent on the control unit.

Q. They merely had a patent on the system, but put all these things together and used their system, and they claim you violated their patent?

A. That is correct.

Mr. Moore: Q. Mr. Schultz, do you know that when you sell these controls to manufacturers or dealers for the manufacturers of heating systems, or when you sell them directly to the manufacturers of automatic electrically operated systems employing oil or coal as the fuel, whether or not these manufacturers or dealers follow your suggestions as to the location of these controls? Do you know that definitely?

A. No; we never know whether our recommenda-
483 tions are followed.

The Court: That is the answer. Let us ask another question. He has the peculiar habit of making quite a speech; after he answers your question directly, then he goes ahead with a lot of explanation.

Mr. Moore: They are not necessary.

The Court: He has answered the question.

Mr. Moore: You are a practical man, not a patent expert.

The Court: Go ahead and ask him another question.

Mr. Moore: Q. When you sell a room thermostat, you generally know where it will be located, do you not?

A. Not necessarily, because there are so many applications for thermostats. It might be in an organ loft; it might be in a pump or valve room, to prevent freezing of the valves. It might be used in a cow barn in connection with ventilators. It might be used in a home for regulating automatic heating equipment. But we do not know where it is going to be installed when a thermostat is ordered from us.

Q. When you sell a warm air furnace limit control, do you know where it will be finally located in the heating system?

A. Well, if it is finally located in a heating system
484 the assumption would be that they would be located in the dome of the furnace or in a duct leading to one of the rooms.

Q. But do you know whether it would be so used when you sell it?

A. No, we never know when we sell a unit just how it is

going to be employed. There are hundreds of these industrial operations on these same controls that we have been discussing.

Q. In a coal stoker heating system where would the warm air furnace control, such as the M-51 be located?

A. That would be located in the bonnet of the warm air furnace.

Q. Well, do you know of any instances where the M-51 has been placed, other than in the bonnet of the furnace?

A. Yes; the Type M-51 control has many applications. We have supplied that instrument in connection with hair dyring equipment, where the extension sleeve on the back of the instrument has been one and a half inches long, and there have been hundreds of them sold for that application. There have been many other applications where the M-51 is used in connection with drying ovens and pretzel baking ovens or bread baking ovens, and in some places we have supplied the sleeve length there as long as
485 four feet.

Q. Do you know of any particular coal stoker manufacturer that used the M-51 and did not place it in the bonnet of his furnace?

A. Yes; Brownell Company at Dayton, Ohio, employed our type M-51 furnace control as a stoker control; that is, a stoker fire maintaining control, and installed it in the stack of the boiler or furnace.

Q. What is the basis of your understanding of that statement you just made?

A. Well, the basis for my understanding was correspondence and conversations with individuals in our own company who were contacting Brownell Company in the early part of—either the latter part of 1930, I am not absolutely certain of the date, whether it was 1930 or 1931, but the early part of 1933 I personally was covering the Ohio territory and called on Brownell Company, and at that time was definitely given to understand that the M-51 was being used in the stack, because they were purchasing that instrument and making their own steel well for protecting the bimetal coil for inserting in the stack as a stoker fire maintaining control.

Q. Do you remember whether it was a steel well or not?

A. Well, Brownell Company, I think, were using
486 at that time—I mentioned steel, but it was a piece of pipe which they would employ, a length of pipe,

and it was considerably cheaper than the stainless steel well which we would provide, and it was for that reason, to lower their cost, that they made their own protecting well, rather than buy the stainless steel well which we were able to furnish.

Q. Now I believe that one of the patents which appeared in the license notice in the Minneapolis-Honeywell Regulator catalog and the Detroit Lubricator catalog is Patent No. 1,882,341, patent issued to a man by the name of Stem. Have you ever read that patent, No. 1,882,341?

A. Yes, I have read that patent.

Mr. Moore: I might state that this patent appears also identified either by serial number or by patent number in the license agreements which have been furnished by the various parties, and I think it is the sub-license to the Detroit Lubricator Company.

Q. Will you very briefly describe to the court what this Stem patent includes?

Mr. Stone: I object to this line of testimony, your Honor. The offer to admit the Stem patent was made in the Kansas City suit and it was objected to and was not admitted. The patent is too late to constitute any
487 help in interpreting or invalidating the patent in suit.

Mr. Moore: We are not attempting to invalidate the patent in suit. We merely want to show what Minneapolis-Honeywell licensed to Detroit Lubricator in connection with the Cross patent in suit, and that patent is mentioned in that license and in the patent notice.

The Court: Go ahead. Overruled. Proceed. You are not attempting to invalidate the patent, are you?

Mr. Moore: No, your Honor.

The Court: You have stated that many times. Please make this brief.

Mr. Moore: Q. Make it very brief.

A. Briefly, this is a control system for use in connection with a furnace or boiler wherein the fuel feeding means can be an automatic coal stoker. It employs a room thermostat No. 4. It employs a fire maintaining or hold fire control No. 5, and an excess temperature limit control No. 6.

No. 5 and No. 6 both are installed in the stack. Briefly, the operation is, that when the thermostat calls for heat it fires the stoker. In the event the thermostat is shut

down for a long period of time, then the stack control No. 5 can close its circuit and fire the stoker to prevent the fire from going out.

488 Should the stack temperature at any time become excessive then the stack control No. 6 will open its circuit and prevent operation of the stoker.

Now, this control system is identical in its operation to the figure No. 2 of Mercoid Bulletin A-14. I do not recall what that exhibit number is.

Q. K.

A. Wherein we have two controls that were mounted, two M-61 controls that were mounted in the stack.

Q. Have you had occasion to read the Jones patent, 1,969,136, which is also referred to, I think, by serial number or by patent number in the same license agreement?

A. Yes, I have read that patent.

Q. And do you understand the construction and operation?

A. Yes, I do.

Q. I show you enlarged photostat of the drawing and ask you to explain just as briefly as you possibly can to the court what is shown in this control system for stoker motors.

A. Your Honor, this patent of Jones, No. 1,969,136, is in effect very similar to the Stem patent, with the exception that in the Stem patent two controls are employed in the stack, and in the Jones patent they have combined two switches in one control unit, that one control unit be-

489 ing mounted in the stack. The position of the switches is at different angles so that the circuit will close when the bimetallic element responds to different stack temperatures.

The ordinary function of the system is that when the thermostat calls for heat the current then can flow in switch 12 of the stack unit and then through a boiler or limit control and operate the stoker.

If the thermostat is in the off position for a long period of time, so that the fire dies down, then this control No. 7 operates and closes switch circuit 10 and fires the stoker just enough to cause an increase in the stack temperature.

Should the stack temperature at any time become excessive, then switch No. 12 will open its circuit and stop the stoker until the stack temperature becomes reasonable.

Now, substantially, this patent of Jones is the same in

its functioning as the patent of Stem, and both of these are the same in their operation as the Diagram No. 2 of Mercoid's Bulletin A-14, which was explained this morning, wherein there are two M-61 controls employed in the stack.

The operation electrically of supplying current to
490 the motor is substantially the same in Diagram No. 2, and in the Jones patent and in the Stem patent.

The Court: All right. Are you finished with that line of inquiry now?

Mr. Stone: Your Honor, may I make an objection to that?

Mr. Moore: That is all on that line.

Mr. Stone: Your Honor, I object to the admissibility of that Stem patent and the Jones patent as against the plaintiff Mid-Continent for the additional reason that apparently it is pertinent here only as showing something that Minneapolis-Honeywell has done, and with whom we have only a licensor-licensee relationship.

The Court: He contends he is not introducing it against Minneapolis-Honeywell. You say it does not affect you, so I do not see what you are objecting to. He says it does not affect Minneapolis-Honeywell and you say it does not affect you, but it does affect them.

Mr. Stone: I object to their introducing it and talking about all this as against us.

The Court: The reason you give is that it does not affect you, but it affects Minneapolis-Honeywell.

Mr. Stone: It just appears in the document that these two patents appear in a license notice that was a Minneap-
olis-Honeywell Regulator catalog. We do not know
491 anything about Stem or Jones. They mean nothing to us. We have issued a license to Minneapolis-Honeywell and that is all there is to it. I do not see how it can be of any pertinence to the plaintiffs here.

The Court: Well, we will let it stand anyhow. Your motion is overruled.

We will take a recess for ten minutes.

(A short recess was here had, after which the proceedings were resumed as follows:)

Mr. Moore: Soft copies of Stem Patent No. 1,882,341 and of Jones Patent 1,969,436 are offered in evidence as DEFENDANT'S EXHIBITS W and W-1.

Mr. Stone: The same objection.

The Court: The same ruling.

(The exhibits were so marked.)

Mr. Moore: Q. Mr. Schultz, please keep your answers as short as you possibly can in reply to the questions which may seem rather technical. You have made all of the wiring diagrams, I believe, in the various Mercoid bulletins, or they were made under your direction, since 1930, is that correct?

A. Yes, that is correct.

Q. Now, I show you here the diagram of the heating system in the Smith residence in Carthage, Missouri, 492 Plaintiffs' Exhibit 37, and I ask you if that wiring diagram follows any of the suggested diagrams ever put out by The Mercoid Corporation?

A. No, your Honor, that diagram is absolutely contrary to any recommendations of The Mercoid Corporation.

In the first place, it shows the Mercoid Type V2-3A relay obtaining its power from the power supply lines 30 and 31, and the power supply then leads directly to the stoker motor 29, with the controls all in the low voltage circuit. That is, the M-51 furnace limit control, the room thermostat 22 and the M-61 stoker control are all connected in the low voltage side.

Such an installation I would not permit in my own home, nor in your home, for the simple reason that the M-51 limit control, which is there to shut down that stoker in the event of excessive temperature in the furnace bonnet, is in the low voltage circuit, and The Mercoid Corporation has always recommended that that be in the line voltage circuit and that control should be installed in either line 26 or 28 leading to the stoker. With this type of a hook-up, if some failure should occur in that low voltage relay so that it remained in the on position, then there would be no means to stop the stoker in the event
493 the temperature became excessive, and it would create a possible fire hazard.

That type of a hook-up has never been recommended by the Mercoid Corporation.

Q. I show you here now the schematic wiring diagram prepared, I believe, under the directions of Mr. Cook, the expert for the plaintiff, and introduced in evidence as Plaintiffs' Exhibit 29, and ask you if that is in accordance with any of the wiring diagrams of the Mercoid Corporation?

A. No, that diagram also is contrary to any recommendations of The Mercoid Corporation. In fact, it does not show the details of the construction of type V2-3A relay. Here they have shown the M-61 hold fire control or fire maintaining control in parallel with the low voltage circuit of the room thermostat.

In a Mercoid recommendation for this same hook-up, the hold fire control would be connected in the line voltage circuit across the Mercoid switch in the relay, so that the type of hold fire control M-61, which is designed to carry the full motor load, whenever that control would close its circuit it would close across the circuit in the relay and directly carry the stoker load.

But what is still more important is that this hook-up as made by Mr. Cook would also be unsafe, because
494 he has placed the M-51 warm air limit control in the line voltage circuit, which is according to our recommendation, but he has it placed in the grounded side of the line in place of in the hot side of the line.

Now, there is a definite danger from such a practice and it has been proven in the past, because the power companies ground one side of the line at the power station. They lead those lines to a transformer, which you will find in outlying districts on poles, and from there your power is distributed to the residence. The power supply is grounded at the transformer. It is grounded for a definite reason, so that when it comes into the equipment in the home, if the practice is followed, the general electrical practice, they connect the black wire to the hot side and they connect the white wire to the ground side, so all the electrical equipment that can be touched is on the grounded side, so if you become grounded in a bath tub or touch an electrical fixture you do not get a shock.

Now, if a ground should occur in this electrical system at a point where it is feeding the stoker motor, I say if a ground should occur at the stoker motor, then the power supply is already grounded by the power company at the pole, so the current would then follow the ground di-
495 rectly to the stoker motor and your limit control would be out of the circuit.

Should the bonnet temperature at this time become excessive, the M-51 control would open its circuit. However, the current would continue to flow through the ground

and the stoker motor would continue to operate and a fire hazard could result. This is absolutely contrary to any recommendation of The Mercoid Corporation.

These two drawings merely substantiate a previous statement that I made to the effect that when we ship controls we do not know how those controls are going to be installed. We have sent out wiring diagrame which are our recommendations, but we have no means of knowing whether those recommendations are followed:

Q. Is this schematic diagram of Mr. Cook, Plaintiffs' Exhibit 39, a proper translation of the diagram in the Smith residence?

A. The only difference is what Mr. Cook explained, in that he had placed the limit control in the line voltage side instead of in the low voltage circuit, as was in the Smith installation.

Q. Who was the president of the Federal Gauge Company when you first entered its employ in 1925?

A. Mr. L. H. VanNess.

496 Q. Where is he now, do you know?

A. Mr. Van Ness is dead.

Q. Do you know when he died?

A. The latter part of 1935 or the early part of 1936.

Q. Who is the president of the Mercoid Corporation at the present time?

A. Mr. Hugh Courteol.

Q. Did he succeed Mr. Van Ness?

A. No. Mr. L. B. Reed succeeded Mr. L. H. Van Ness.

Q. Do you know when Mr. Courteol became president?

A. About March of 1938.

Q. Do you know what happened to Mr. Reed?

A. Mr. Reed died the early part of this year.

Q. You say that you are now a vice president of the Mercoid Corporation, is that correct?

A. Yes, that is correct.

Q. Are there any other officers of the corporation who were officers of the Federal Gauge Company at the time you entered their employ in 1925?

A. Yes. Mr. J. W. Owens.

Q. Do you know what office he occupied in the Federal Gauge Company?

A. Yes, he was vice president in charge of sales.

Q. What is his office at the present time?

497 A. He is now executive vice president of the company.

Q. Are there any other vice presidents of The Mercoid Corporation at the present time?

A. One other.

Q. Who is that?

A. Mr. R. F. Fisher.

Q. What are his duties?

A. He is general manager of the company's New York office.

Mr. Moore: Direct examination closed.

*Cross Examination by Mr. Stone.*

Q. Mr. Schultz, what stoker controls does the Mercoid Corporation recommend today?

A. The stoker controls which are recommended today are shown in The Mercoid Corporation's catalog No. 500. There are two types of timer controls and there is also a time and pressure combination control for industrial application. There is also a stack control of the M-63 SW type, which is an out fire control. There is also the type JMV Stokatimer.

Q. Mr. Schultz, you have testified that The Mercoid Corporation, if you include all the various kinds of
498 each type of control, probably makes several hundred controls, as manifested by this catalog No. 400, Defendant's Exhibit Q.

Mr. Moore: The witness did not testify several hundred, but about a hundred.

Mr. Stone: That is all right, your Honor.

Q. Now, do you understand that the plaintiff limits its charge in this lawsuit to the Stokatherm JMV, so far as this catalog is concerned?

Mr. Moore: I object, your Honor. He is asking his opinion as to the lawsuit and the witness is not qualified to express an opinion on the lawsuit.

Mr. Stone: It seems to me,—

The Court: Objection sustained.

Mr. Stone: Q. If this court should grant the plaintiff full relief and order the defendant to stop making the Stokatherm JMV, would all the vast majority of controls, or would all the rest of the controls in this catalog continue to be marketed by the defendant?

Mr. Moore: I object, your Honor. That is a hypo-

thetical question and has nothing to do with the issues before the court.

The Court: Objection sustained.

Mr. Stone: Q. If you will look around at this table, 499 Mr. Schultz, you will see a large collection of controls, which you produced and discussed in connection with Defendant's Exhibit A, Defendant's Exhibit C, and possibly another, and you stated that The Mercoid Corporation had been manufacturing these controls for a long time. Now, if I remove this JMV Stokatherm from that table, is there anything on that table left that we are complaining about now?

A. There is the type M Pyratherm.

Q. Was the type M Pyratherm on the table?

A. No. One very similar to it.

Q. What control did you pick up?

A. Type M-1.

Q. So that all of these controls which were discussed at great length on the theory that the defendant here had been making them for a long time, both prior to our application and prior to the date of our patent, are not complained of, is that correct?

A. Yes, we make many, many controls that have not been complained of.

Q. Answer the question, on those controls on the table?

A. With the exception of the JMV Pyratherm, I think that is correct.

Q. You mean Stokatherm?

500 A. Stokatherm, yes.

Q. Now, today, what controls does The Mercoid Corporation recommend for out fire stoker operation?

A. It recommends the type M-63 SW out fire control, as well as the type JMV Stokatherm, which incorporates the out fire features.

Q. What type does it recommend for the hold fire control?

A. It recommends the timer units, THV and TV2 timer units; also the JMV Stokatherm.

Q. When was the JMV Stokatherm introduced to the market, approximately?

A. Oh, approximately in 1938.

Q. Was that the year that you discontinued making the M-61?

A. I think it was the same year.

Q. Before you introduced the JMV Stokatherm, what

control for hold fire operation was The Mercoid Corporation recommending?

A. The type TJV Stokatherm control system and the type M-61 stoker control.

Q. When did the type TJV Stokatherm system first appear on the market, approximately?

A. I think the first introduction of that unit was in 501 1937.

Q. I show you Defendant's Exhibit O and ask you to look at the date on the back.

A. That was October, 1935.

Q. Now, when did The Mercoid Corporation first introduce the M-61 control?

A. In the early part of—

Q. Well, the A-14 circular is dated February, 1931.

A. It is dated 1931, but in many cases control units are introduced a number of months before circulars are available.

Q. Do you care to answer my question differently from the literature, then?

A. I was going to answer that I thought it was in the latter part of 1930.

Q. So, as I understand it, from some time, let us say, in the winter of 1930 to 1931, The Mercoid Corporation started to recommend the M-61 as a hold fire control and continued to do so until sometime in 1935, when it continued to recommend the M-61, as well as a new hold fire system called the TJV Stokatherm, and this recommendation for hold fire control purposes terminated in 1938, when they brought out the JMV Stokatherm; is that statement approximately correct?

502 A. Well, the M-61, that is, the designation of M-61, came about in 1939, but that was merely the M-51 control being carried over.

Q. I am speaking of designations, Mr. Schultz. Let us just use the designations. Is my statement, using those designations, correct?

A. I think it is substantially correct. I cannot be sure when you mention the spring or fall. It may be months one way or the other.

Q. Now, Mr. Schultz, can you find in any of your literature prior to the filing date of the Cross patent, which is November 11, 1926,—can you find in the Mercoid literature any wiring diagram or any instructions of how to use a control in conjunction with a room thermostat

for operating a stoker during hold fire periods to keep it from going out?

A. No, because no specific literature was prepared for that field of application before those dates, that is, 1926, and the reason was that there were only a comparatively few stoker manufacturers in the country. The leading stoker manufacturers at that time, such as the Iron Fireman, were manufacturing their own controlling equipment. The motor stokers that I previously mentioned were employing a method of operating their stokers which
503 incorporated a damper motor and we were not manufacturing damper motors at that time. As for the other manufacturers who had applications such as is covered by the Cross patent, they were so few that it would not pay at that time to stand the expense of printing literature for the very limited field.

Q. Now, Mr. Schultz, did you testify on direct examination that the first circular which the Mercoid got out showing a room thermostat and stack control disposed in parallel relationship for operating a stoker to keep the fire burning when the room thermostat was not calling for heat, that the first description was in this A-14 folder, Defendant's Exhibit K?

A. That was the first printed description. However, it was customary—

Q. I will ask you the question this way. I thought I had made it clear. Is that the first published diagram or statement?

A. Not the first published diagram or statement. That was the first printed booklet that was confined strictly to stoker controls, and in it it showed hook-ups for stoker application, but those prints shown here had to be made up on blue prints, and in many instances when there
is a restricted field of application blue prints are
504 made up and sent out sometimes years before a publication is printed.

Q. Well, do you have any circulars from a date prior to this?

A. No, that is the first circular covering stoker controlling equipment.

Q. This is the first one you sent out broadcast to develop a market, if there was a market to develop?

The Court: Is that a question or a statement?

Mr. Stone: A question.

A. I thought it was a statement. I am sorry. Yes, that was the first printed bulletin.

Q. And is that printed bulletin dated subsequent to the date of the Cross patent in suit?

A. Yes, that is a subsequent date.

Q. Now, you have testified that in the East you had encountered a couple of stoker system manufacturers, I believe, back in 1929 or 1928, some place in there—

A. Even earlier than that.

Q. When they wanted to keep a fire from going out, will you state the generally accepted terminology of the type of systems they were using?

A. No, I would not state that, because I had previously mentioned that we had practically no contact with
505 stoker manufacturers in the eastern part of the territory, where I was located. There were only two manufacturers and they offered no possible control business to The Mercoid Corporation, so as a result we spent no time checking with them. I could not state what changes, or what methods they were employing at that time.

Q. When did you first learn of the Cross system of stoker control for holding the fire?

A. Oh, early in—I would say about eight or nine years ago.

Q. Do you mind giving us a year on that?

A. I believe it was first called to my attention probably in 1932.

Q. That was subsequent to the date of the Cross patent?

A. Yes, surely.

Q. Back in 1930-1931, did you, as well as others running The Mercoid Corporation, anticipate a great development in the use of stokers, automatic stokers for domestic purposes?

A. I have already testified that in 1930, or shortly thereafter, the stoker manufacturers were having a phenomenal growth throughout the Midwest. They were actually springing up all over. We had to keep chasing all
around the country to keep in contact with them, as
506 they would start making new domestic stokers.

Q. What was responsible for this amazing growth in the demand for stokers?

A. The actual answer to that is that the coal industry finally woke up and they got together and started producing stoker coals and they put money into encouraging the development of domestic stokers, because oil burners, as

well as gas burners had been making such inroads into their business that they encouraged the development of stokers, and the stoker not being particularly difficult to engineer, that is, to get some form which would burn coal, manufacturers started springing up all over. Wherever there was a foundry available, they started building stokers of their own design.

Q. When in the history of The Mercoid Corporation did the stoker control become a substantial factor in your business?

A. Immediately when the stoker manufacturers started growing, because we were—

Q. Give me a year.

A. I would say in 1930.

Q. And that is the date of your patent; that is the year of the patent?

A. That is the year of the patent, yes.

507 Q. So that Mercoid Corporation in supplying these controls was meeting a demand which, for some reason not fully known to you, the public had, isn't that right?

A. Yes, we were always on the lookout to meet control demands for new applications.

Q. You did not create that demand?

A. We never create the demand for controls.

Q. By meeting that demand all business that you got was additional business over what you had theretofore, wasn't that right?

A. That is true of any new line that opens up where controls can be employed.

Q. And am I to understand if as a matter of fact the Mercoid Corporation has gone out here and actually infringed our patents, so as to bring to itself a lot of business, if that should be the fact, it simply amounts to this; that they took a lot of business, let us say, from us, as we claim, which they would not have had if that public demand had never been created, isn't that right?

Mr. Moore: I object, your Honor. This witness is not qualified so that he can state the amount of business that The Mercoid Corporation or the Federal Gauge Company does in any one year.

508 Mr. Stone: It seems to me, your Honor,—

The Court: Do you understand that question, Mr. Witness?

The Witness: No. I was going to ask to have the question read again.

The Court: I didn't understand it either.

Mr. Stone: Will you read the question, Mr. Reporter?

(Mr. Stone's last question was read as above recorded.)

Mr. Stone: I will withdraw the question, your Honor.

Q. Did you get additional business as a result of this activity in the stoker field?

A. Oh, yes, we got additional business.

Q. That additional business was on hold fire controls, was it not?

A. No, it would be on complete control systems for the stoker. Hold fire controls were merely one control in a system. There would be thermostats; there would also be furnace temperature and pressure limit controls.

Q. By satisfying this demand for hold fire switches, you were able to sell a lot of other equipment as well?

A. I would not say that.

Q. Mr. Schultz, you testified that the M-61 control was discontinued in 1938. Why was that?

A. Well, there was a falling off in the demand for
509 the M-61 Mercoid stoker controls, because our trade had been intimidated. Furthermore, we had for some time been developing the type TJV Stokatherm control system, which has very definite improvements in its operation over the type M-61. It incorporates so many additional features, and it had been designed specifically to meet the requirements of the stoker trade.

When that unit came along, we naturally started pushing in our sales department the improved system of controls. It gave us definite sales advantage over the type of controls such as the M-61, which were nothing but make shift controls to handle stoker requirements.

Q. In other words, it was discontinued because the TJV came out?

A. No, definitely not. It has never been our policy to immediately discontinue a control when a new type of control comes out. We are today selling controls which we can state were obsolete in 1928, yet we get demands for that same type of control.

Q. But you could not produce an M-61 that went out of business or which you ceased to make only three years ago, is that right?

A. It was three years ago, or it may have been slightly earlier that the last M-61 controls were built.

510 Q. And you do not produce such a control?

A. That is correct. We have not produced them for three years, that is right.

Q. For three years?

A. That is right.

Q. Was the M-61 control discontinued because you brought out the JMV?

A. Not necessarily.

Q. Stokatherm.

A. We are still showing the type M-63 SW control.

Q. I don't think that is responsive.

A. And if other factors had not entered the field, we would probably be showing the M-61 control today.

Q. When did you first hear about the suit which the plaintiff here brought against Mr. Smith in Carthage, Missouri?

A. I heard about the suit at the time it was occurring.

Q. When did you hear about the decision of the Judge?

A. Some time thereafter. I cannot say just when. It has not been my policy, or it has not been the company policy to enlighten me on questions of that kind. I have been handling engineering and not patent cases.

Q. But patent cases get down into the engineering department when the engineering department is en-
511 gaged in making diagrams and circulating them through the trade and telling the trade how to do something which is the subject of a patent, do they not?

A. That is correct, and that is just what happened on the type M-61 control. Instructions were issued to stop production on the type M-61 control. I received instructions that there should be no further literature on that control and I had nothing to do with what led up to that.

Q. When did you get instructions to bring out either the TJV or the JMV?

A. Those controls had been contemplated and had been worked on for many years. Just as soon as the stoker industry reached a point where it justified the expense of experimental work, which runs high, our engineering department started work on the TJV Stokatherm control system and believe the first work on that was started in about 1932.

Q. That was the year we charged you with infringement?

A. That is correct.

Q. When do you think you started on the JMV Stokatherm?

A. Our development on that, I believe, started probably in 1934.

Q. When you answer that question that way, that
512 happens to be a year or better prior to the time you brought out the TJV and, as I understand it, about four years prior to the time you brought out the JMV. Do you mean you started on the JMV in 1934, just because the JMV has a lot of parts in it that were not in the TJV?

A. No, not necessarily. There is a long period of time from that point when a control is perfected in the laboratory until it gets into production.

Q. I understand that perfectly.

A. And we realized the advantages of the TJV system, but we also realized that it was an expensive control system when two units were involved, and the engineering department immediately started on combining those two units, which were the TJV and the M-11 Pyratherm, into one instrument, so that production costs could be reduced, in order to meet a general demand for stoker controlled equipment, but overlapping would not mean anything.

Q. It looks to me as if the development of the TJV type and the JMV type, both being stokers, was apparently proceeding very concurrently with similar lines of thought. Do they stand on exactly the same footing?

A. Would you read that question, please?

(Mr. Stone's last question was read as above recorded.)

513 A. They are very similar instruments. The JMV is substantially the TJV and the M-11 Pyratherm. They have merely been combined together. Their functions, as far as being connected to a stoker is concerned, are identical. They incorporate the same functional features.

Q. Then you do agree with Mr. Cook when he stated that the JMV is really nothing but a combination of the TJV and the M-11 Pyratherm, don't you?

A. I have never denied it.

The Court: Let us take a recess now. Ten-thirty tomorrow morning.

Whereupon an adjournment was taken to 10:30 o'clock A. M., Friday, September 12, 1941.

514 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company
*vs.*
The Mercoid Corporation.
} Before Igoe, J.

Friday, September 12, 1941,
10:30 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Bair, Freeman, Moore.

The Court: You may proceed.
Mr. Stone: May it please the court.

ALBERT N. SCHULTZ, a witness called on behalf of the defendant, having been heretofore duly sworn, resumed the stand and testified further as follows:

*Cross-Examination (Continued) by Mr. Stone.*

Q. You are familiar with the M-61 control, aren't you?
A. Yes, indeed.
515 Q. On page 370 of the record you asked: "Have you had much experience in handling the actual physical M-61 control in the way of demonstrating it to customers and otherwise?" And your answer was, "Yes, I would say many hundreds of times." Is that right?
A. Yes, that is correct.
Q. But you did not produce an M-61, did you?
A. No, I did not.
Q. Why not?
A. That instrument has been out of production for a number of years and there were none of them available.
Q. How many years?
A. I believe the last instruments were produced in 1937.
Q. But you were able to produce instruments here which you produced back in 1926, weren't you?
A. That is correct. Even further than that. 1922.
Q. And each of those instruments that you produced

here were produced for the purpose of creating a helpful picture for the defendant Mercoid Corporation, isn't that right?

A. Yes, that is correct.

Q. But when it came to producing a control which might have a bad effect on the issues in this lawsuit, that could not be done?

516 A. I would not say that.

Q. Well, you did not produce it. I made a formal demand here about eight months ago.

A. The Mercoid Corporation is fully capable of producing M-61 controls today and it would be just a matter of issuing an order on the factory to produce one of those instruments, but they are not carried in stock.

Q. Did you look for an M-61 control at the plant?

A. I am sure there is not an M-61 control in the factory.

Q. Now, on page 371 of the record, you will remember that we took these two controls and set them right here before his Honor—you said: "Now, by modifying the M-51 warm air control merely to the extent of shortening the sleeve length to the same length as the M-1 control and equipping it with the standard curved type of stack flange, that instrument was then designated as type M-61 stoker control."

That is what you said, isn't that right?

A. Yes, that is correct.

Q. And you wanted his Honor to understand that the major differences in the M-61 stack control, which was new in 1931, were differences which you could find on instruments that had been produced theretofore by The Mercoid Corporation, is that right?

517 A. Yes, that is correct.

Q. You did not tell him about any other differences?

A. There are many other differences that we can make in modifying those controls.

Q. Did you tell him about any other differences?

A. I mentioned one other difference later in my testimony.

Q. Did you mention it at the time we are discussing right here? This was the important time. We were trying to find out and to establish for the record whether or not this M-61 was an important control. Did you mention it then?

A. I do not know whether I mentioned it right at that point.

Q. I will read you the next question that you answered: "That is merely a change in the dimensions, is that correct?"

And you said, "That is all."

And a little later on you voluntarily said: "So that every modification that we have made on this M-51 series of controls with the modifications made the unit a catalog item and a stock item, and we then gave it a different type number. But they are all brothers as far as the control unit is concerned. Their construction is iden-
518 tical, their operation is identical, with the exception of the slight modifications which I mentioned."

Is not that right?

A. Yes, that is correct.

Q. Now, Mr. Schultz, I hand you a control which I had a service man locate the other evening after this matter became something of an issue here. I ask you to tell us what that control is.

Mr. Moore: May it please your Honor, I object to that question as not proper cross-examination.

Mr. Stone: Why isn't it proper cross-examination?

Mr. Moore: Because the witness has not testified to anything about the control that you have just brought out for the first time.

Mr. Stone: The witness has testified about the M-61—

The Court: Wait a minute. You are handing him something and you are asking him a question. The objection is overruled. He may answer.

The Witness: What is the question?

(Mr. Stone's last question was read as above recorded.)

The Witness: A. That is a type M-61 stoker control.

Mr. Stone: Q. Will you read the serial number on it, if you can?

519 A. Series No. M-73778.

Q. Who made that control?

A. That control was made by The Mercoid Corporation.

Q. Is that the control you have been talking about in those pages of the record from which I was just reading excerpts?

A. I believe those were M-61 controls of 1930 that you were referring to, isn't that correct?

Q. Well, are they M-61 controls? We were talking about M-61 controls and no date appeared in the record.

A. This has a later modification of the M-61 control.

Q. All right, let us take the modification. Put it right there beside the court and let us compare this control now with these other two controls and see if there is something else now that you did not mention.

A. Yes. There is a modification that came later on, to the extent that it was found that when the bimetallic thermal element was subjected to the corrosive gases, that is, the corrosive combustion gases of the coal fire, as well as to the fly ash that came up the stack, that the operation of this bimetallic coil would be affected, so that the instrument was modified there to protect that bimetallic coil merely by placing a stainless steel well over the coil.

Everything else I said relating to the instrument is
520 the same.

Q. A moment ago you said there were many other changes. Will you point them out?

A. Yes, there were many other changes in what I would refer to as the type M-51 series of controls, and I previously stated we had made them for hair drying equipment.

Q. I am not asking that question. I am asking what changes there are in the M-61 control over other controls you previously had. You have stated three, as I understand. The first one is that you have a shorter sleeve.

A. That is right.

Q. The second one is that you have a flange by which it is fitted particularly for mounting on the stack?

A. Yes.

Q. And the third is that we have the protective well?

A. That is right.

Q. Now, are there any other differences in the M-61 over the M-51?

A. None that I can think of right now.

Q. In answering those questions on direct examination, you tried to give the impression—I will read it to you—that the differences between the M-61 control and the
M-51 and the M-1 when combined were merely matters
521 of degree, because, you said, that is merely a change in dimensions, is that correct; and you said that is all. Now, you just got through telling us that in order to protect this thermal element here from the kind of material that goes up a coal furnace flue, you had to do

do something to protect the thermal element, is that right?

A. We did not necessarily have to do it.

Q. Do these exhibits contain statements personally written by you, or under your direction, wherein when you brought out that protective well on there, you told your dealers to buy the protective wells and take them out in the field and put them on M-61's that were already in the field; are those statements in there?

A. Yes, but there is one other angle to that.

Q. Just answer the questions. You say yes, the statements are here. Your own counsel can bring out these other points.

A. But that stainless steel wells had many other applications than in connection with the M-61.

Q. When did you first bring out a stainless steel well?

A. May I refer to the bulletin that shows the first stainless steel well?

Mr. Moore: Is this the one you are referring to?

522 (Handing document to the witness.)

The Witness: Yes, that is the bulletin.

Mr. Stone: Q. Before you answer that question, are you certain that that is the first bulletin?

A. I am quite sure it is.

Q. What is the date of that bulletin?

A. That bulletin is March, 1933.

Q. I handed you that bulletin because that is the only one I happen to have.

A. And I am quite sure that that was the first bulletin showing it, because it was shown for the first time when we produced a loose leaf catalog and the bulletin for the first loose leaf catalog had a constant unit number, such as No. 240.

Q. All right.

A. And any subsequent bulletin would have 240-A or B or C.

Q. All right.

A. This bulletin is dated March, 1933, but that stainless steel well was available and in production for, I would say, at least six months before the bulletin was printed.

Q. So that gets us back into the fall of 1932?

A. I would say that is correct, yes.

523 Q. And how many different types of stainless steel wells did you make?

A. Just the one type, because all of the M-51 series, with the exception of—

Q. Just a minute. How many types did you make?

A. Just one, I said.

Q. And that was the one that fitted on the M-61, is that correct?

A. And also on any M-51.

Q. Show me an M-51, bearing the serial No. M-51, on which you can put that well; show it to me.

A. That well will apply to an M-1, it will apply to an M-51, it will apply to an M-52 or it will apply to an M-53.

Q. Show me in all of your literature here where you recommend the employment of that well on one of those.

A. We have hundreds of industrial applications and this well was employed to my direct knowledge, in connection with oil reclaiming equipment.

Q. Just a minute. That is not responsive, your Honor. Show us one piece of literature where you have recommended, prior to the time you brought out and recommended it for use on the M-61, where you recommended its use on the M-51.

524 A. We never published—

Q. Just a minute. Can you show me one piece?

A. No.

Q. Can you show me lots of pieces where you recommended it for the M-61? Yes or no.

A. Yes, that is true, but there still were many industrial applications, and if the volume of business did not justify printing literature, we did not print the literature, but we still sold the control.

Q. But the problem was created in this stoker field of keeping that thermal element clean, was it not?

A. Also in the industrial field.

Q. But it was in this particular stoker field, and that is the need you met when you brought out this M-61?

A. We would have brought out that stainless steel well if there had been no need in the stoker field, because it is required in the industrial field to protect the bimetallic coil against corrosion.

Q. What did you bring it out for?

A. For stoker application and industrial application.

Q. Was it brought out in the M-61 and that is where you told the public to use it?

A. That is one of the applications, yes.

Q. That is where you told the public to use it?

525 A. In that printed literature, yes.

Q. And did you tell the public that in printed literature as to any other application?

A. Because there wasn't any other application to justify it then.

Q. Did you tell it to the public?

A. Yes.

Q. You did tell it to the public?

A. Yes, in letters and in bulletins.

Q. That is exactly what this case is about; not so much involving that specific control, but what you went out and told the public or told everybody to do.

A. We don't have to tell everybody in printed literature. We have salesmen and we have engineers in the field.

Q. But the most effective way of reaching a large volume of dealers and distributors is to send out a lot of those circulars, is it not? You print those circulars in runs of 1,000 to 5,000, don't you?

A. That is correct.

Q. And you send them out to large numbers of dealers? How many dealers are there in the country that use these controls, have you any idea? Well, they run into thousands, don't they?

A. It may run into thousands, yes.

526 Q. So you need a large number. You cannot send a salesman out to a dealer every time you want to sell a control?

A. But I can send a sales bulletin out to all of our distributors throughout the country and to all of our salesmen and engineers and notify them of a modification in the control, and they can go out and get a large volume of business without any literature.

Q. Will you produce any bulletin or any letter in which you told anybody to use a stainless steel well on any piece of equipment, other than the M-61, prior to that bulletin right there?

A. Not with printed literature, but it was done just the same.

Q. You have no such letter to produce?

A. No. There would not be any letter necessarily to substantiate that statement. It is a policy of our company, and it has been for years. If we print—

Q. In other words, just—

A. If we printed bulletins on every modification of

Mercoid controls, we would be so cluttered up with bulletins we wouldn't be able to do any business.

Q. You were able to put out this type of bulletin, though, weren't you?

A. That is right.

527 Q. I want to get this thing perfectly clear. Are you still putting out a control similar to this M-1 or the M-1?

A. Yes, we still build that control.

Q. Do you recommend to the public that they put one of these stainless steel wells on it?

A. No.

Q. Why not?

A. For the very definite reason—first, I will go to the M-51 type.

Q. I want you to answer my question.

A. I have got to explain it if he wants me to answer, your Honor.

The Court: Answer it.

Mr. Stone: Q. All right, go ahead.

A. With the M-51 type of control, that instrument has a calibrated dial and operates at definite predetermined temperatures. When any chemical change or corrosion occurs on this bimetal, it automatically throws the calibrating dial out of correct calibration, which means that in the field some service man has to go back and recalibrate that control in order that it would continue to function satisfactorily.

On the other hand, the M-1 or the M-11 Pyratherm,
528 which operate with a gravity clutch mechanism and do not operate at predetermined temperatures, any change that occurs in the bimetallic coil does not affect the operation, because whether the bimetallic element is changed or not, when the temperature starts lowering, the circuit will close and whenever the temperature rises the circuit will open, even though the bimetallic element is changed to a considerable extent.

Q. So when you used the stainless steel well you did keep this thermal element inside there from being damaged by the contents of the gases from the coal furnace, is that right?

A. Yes.

Q. And that problem does not exist in this oil burner situation at all?

A. That is right. It does not exist on the M-1 or the M-11 Pyratherm.

Q. Now, I wonder if you will remove the front of the M-61 control. Will you step around here, so his Honor can see this?

(The witness took the instrument referred to to the front of the court's bench.)

Q. I would like you to tell the court if you turn the thermal element out here, is that the same as turning 529 it in here and turning that?

A. Yes.

Q. If you turn this element in here, clockwise, like this (demonstrating), that opens the switch, doesn't it?

A. Yes. That would be on a rising temperature, at the thermal element; the switch will open when the temperature at the thermal element reaches the setting of the indicator.

Q. Now, on a falling temperature, the switch is thrown into closed position, is that right?

A. Yes.

Q. Is that in closed position now?

A. Yes.

Q. Now, what is it that initiates the movement of this mechanism so as to throw that switch into closed position?

A. It is the decrease in temperature on the bimetallic element which causes it to rotate and move the mechanism to the low temperature setting indicator, which at that temperature will close the circuit.

Q. Now, on the M-61 instaliation, this is the hold fire switch, is it not?

A. That is one application. There is one other application in that particular.

Q. All right. In the M-61 application, such as is 530 shown in Plaintiffs' Exhibit 40, this is the hold fire switch, is that right?

A. Yes, that is correct.

Q. When the stoker starts in response to the closing of this switch, what happens to the temperature in the flue?

A. The temperature in the flue would then start rising, due to the increase in combustion in the furnace.

Q. And with that this starts to rotate and it opens the switch, is that right?

A. At the temperature that the top indicator is set at, it would open the switch, yes.

Q. Now, in the M-61 it is the thermal element that initiates the mechanical action in here which closes the hold fire switch to start the stoker operating, is that correct?

A. Yes.

Q. And in this M-61, it is the thermal element which initiates the mechanical action which opens the hold fire switch after the stoker has run for a selected length of time, is that right?

A. Yes, that is correct.

Q. Now, Mr. Schultz, I would just like to repeat this with the JMV, Plaintiffs' Exhibit 44, if you will just
531 step up again.

A. Yes, surely.

Q. Now, let us assume that the temperature in the flue is high. We are having a falling temperature, due to the fact that the room thermostat is not calling for heat. Now, your Honor, if you can just look right in there, I want you to watch what takes place. The thermal element here is failing, is it not?

A. That is correc

Q. And when this little shoulder here drops down this finger, a cam is keyed into the timer, isn't that right?

A. Into the main gear of the planetary gear system of this timer, yes.

Q. This timer has an arrangement over here whereby it can run for 30 or 40 minutes. What is happening? If your Honor will look here where this finger is right here, there is a cam rising. That is correct, isn't that right?

A. Yes, that is correct.

Q. Now, if your Honor will note here, what is this little switch over here?

A. That is the switch that closes across the relay circuit.

Q. What is this switch called?

A. That would be the fire maintaining switch.

532 Q. That is the hold fire switch?

A. What you call the hold fire switch, yes.

Q. And that switch corresponds exactly with this M-61 switch, isn't that right? Yes or no.

A. In the fact that it operates the fire?

Q. Yes.

A. Operates the stoker to start the fire.

Q. All right. Now, here comes our little cam, because it is keyed in, by virtue of the thermal element, and it gets in here and it throws that switch into closed position (demonstrating).

A. No, the thermal element does not. It is the synchronous motor that causes it.

Q. Did I say thermal element? This synchronous element in here finally throws that switch into closed position.

A. Yes. We will say within an one-half hour period.

Q. All right. What was it that started that timer in operation?

A. The timer would be running continuously as long as the furnace switch, that is, the safety limit control, was closed.

Q. What keyed the timer into this little cam?

A. The movement of the bimetallic coil locked the one gear, so that the motion of the synchronous motor then 533 caused the planetary gears to climb up the side to close this circuit.

Q. What initiated the mechanical action which ultimately closed that hold fire switch?

A. The first movement was the bimetallic movement to—

Q. That is right. That's enough. The thermal element did it. Now, let us assume the stoker is burning. That is correct, is it not?

A. Yes.

Q. And what happens in the stack? The temperature rises?

A. A rise in stack temperature.

Q. And as the rise in stack temperature continues, this little element here responsive to this, slips that finger and opens the switch, is that right?

A. Yes.

Q. What started the train of events, what initiated the mechanical action here to open the hold fire switch?

A. The rise in the stack temperature.

Q. It was this thermal element, was it not?

A. Yes, that is correct.

Q. So in the JMV, just like this M 61, it was the thermal element that initiated these mechanical arrangements which ultimately closed the hold fire switch, is that right?

534 A. That is correct, it was the thermal element, but in the M-61 it operated on a predetermined temperature and on this you cannot say what temperature it operated at.

Q. That is a question his Honor will decide. I am asking you what initiated the mechanical action which ultimately caused that hold fire switch to close? I ask, is it the thermal element?

A. The movement of the thermal element, yes.

Q. And what is it that initiates the mechanical action which opens the hold fire switch? Is it the thermal element?

A. Yes, it is the thermal element.

Q. And the purpose of this hold fire switch is to keep the fire from going out, isn't that right?

A. That is one of the purposes.

Q. And if you left the thermal element off of this JMV Stokatherm, would the thing work?

A. No.

Q. So that it is the thing that starts and stops whatever mechanism you have back here that makes the stoker go or stop, is that right?

A. When it is combined with the other mechanism, yes, that is, the timer mechanism.

Q. The thermal element does start the mechanism
535 and does stop it, that is correct, is it not?

A. Indirectly it does.

Q. You do have here an additional element, isn't that right?

A. Yes, the timer element.

Q. So what we have here is the M-61, plus a timer in here, is that right?

A. No, that is not right, because on the M-61 you have a calibrated dial so that the switch opens and closes at predetermined temperatures, and on this unit, while you have a bimetallic coil, you merely have that setting into operation a timer movement, which in turn closes the circuit to operate the stoker, but—

Q. That is good enough for me. Now, did The Mercoid Corporation apply for a patent on this device, or did Mr. McCabe?

A. There are three patent numbers shown on this instrument. I cannot tell you exactly what they refer to without checking the patents.

Q. You do not know the answer to that question?

A. No, I do not.

Q. Is there any reason why the Patent Office would not give a patent on this additional improvement, despite the fact that it incorporates the safety principles of your 536 M-61?

Mr. Moore: I object, your Honor.

Mr. Stone: This man—

The Court: Objection sustained.

Mr. Stone: Now, Mr. Schultz, I would like to come back to the TJV system. Where is this TJV housing to be located in the basement?

A. That is generally attached to the basement wall, or to a post at a convenient location near the stack.

Q. Where is the hold-fire or fire maintaining switch in this TJV?

A. The fire maintaining switch in this instrument, the TJV, is this small switch to the right in the upper part of the mechanism.

Q. This is the M-11 Pyratherm which is mounted in the stack, is that right?

A. Yes, that is correct.

Q. Assuming that the M-11 Pyratherm is in a stack where there is a falling temperature, the effect of the falling temperature is to close the M-11 switch shortly after the drop in temperature or decline in temperature has commenced, isn't that right?

A. Yes, that is right.

Q. When that stack switch has closed, what is the 537 effect through the wiring which goes to this TJV housing upon the little cam member which I point out to you?

A. The first effect is an electrical effect to cause the plunger of the relay to the right of the mechanism to rise, and at the same time it energizes the small synchronous motor and starts it operating.

Q. That is sufficient. Now, then, your Honor, it is hard to get this. We have this little plunger in here closed, and this cam is now running by a clock, isn't that right?

A. Yes, that is correct.

Q. This little cam keeps climbing until it closes the hold fire switch, is that correct?

A. The fire maintaining switch, yes, or the hold fire switch, as you call it.

Q. Now, what is it that initiated all of this mechanism

which ultimately closed the hold fire switch? It is the thermal unit on the M-11; isn't that right?

A. Yes, that is correct.

Q. Assume the M-11 is in a stack where the temperature is now rising, due to the fact that the stoker has been turned on, after a certain length of time this switch in the M-11 will be opened, isn't that right?

A. Yes. Not after a certain length of time. After 538 there has been a rise in the stack.

Q. That is right. In direct response to the thermal element in the control.

A. That is right.

Q. When that occurs, this solenoid is deenergized and the plunger drops, doesn't it?

A. Yes.

Q. And this switch will open?

A. That is right.

Q. When this switch over here opens, that is what happens?

A. Yes.

Q. When this switch opens, the plunger drops?

A. And another important function, that planetary gear automatically drops there, as you can see, and—

Q. Just a minute. What is it that initiates all of this mechanism to start the stoker? It is the thermal element, is it not?

A. That starts the operation of the timer, which in turn starts the operation of the stoker, yes.

Q. And it was the thermal element on the M-11 which opened the hold fire switch, isn't that correct?

A. Well, it opened the circuit in the M-11, which in turn opened the hold fire switch.

539 Q. But it initiated it?

A. Yes.

(The witness here returned to the witness stand.)

Q. Now, Mr. Schultz, in all of these controls, it was the thermal element mounted in the stack—in each case it was the thermal element mounted in the stack which initiated the mechanical devices for closing the hold fire switch and starting the stoker, isn't that right?

A. Yes, that is correct.

Q. And in all of those three types of installations, it was the thermal element mounted in the stack which initiated the action of the mechanical devices for opening the

hold fire switch to stop the stoker after there had been a rise in temperature in the stack, is that right?

A. Yes, that is correct.

Q. So that in those respects, these systems are all alike?

A. Yes, that is right.

Q. Now, I believe you testified on direct examination that the distinction between this TJV system and the JVM system, on the one hand, and the Cross system on the other hand, was that these two Mercoid systems would start
540 the stoker on various low temperatures, isn't that right?

A. You are referring to the TJV and the JMV?

Q. That is right.

A. On various temperatures, yes. You cannot determine what it might be.

Q. How efficient are some of the new furnaces that are being put on the market?

A. Oh, some of the modern furnaces are very efficient.

Q. What is the differential in stack temperatures between its high and its low?

A. Just what do you mean, between its high and its low?

Q. Well, let us take an ordinary house installation and assume that we have two or three days of 10 or 15 degrees below zero. What is the maximum differential in temperature between the highest temperature in, say, a portion of the flue, between the furnace and the chimney, and the lowest temperature? Would it be 100 degrees or 500?

A. I have got one side of the question. What do you mean by the lowest temperature? The fire may be out.

Q. With out the fire going out?

A. And on a stoker installation?

Q. Yes.

A. I have not conducted any exact tests on that type of furnace, but I would imagine it would be somewhere
541 between 600 high and 100 low.

Q. In other words, you think that new furnaces are sending heat up the stack at 600 degrees temperature?

A. You did not qualify as to how long the stoker might be operated and as to how high the limit control might be set. If the stoker is permitted to run continuously for hour after hour, you are apt to get a high stack temperature.

Q. I am talking about highly efficient furnaces.

A. That would still be a highly efficient furnace.

Q. Let us assume a furnace in which the differential in the stack temperature or the position in which you mount this in the stack is such that it does not go over a hundred degrees. Are you prepared to say that a JMV does not turn on the stoker at the same temperature all the time?

A. Yes, I am.

Q. Look here a moment. Here is a stoker running, turning the thermal element, and just before this device ratchets the stoker turns off and that is the maximum temperature in that furnace. Now, it starts to drop and at that point it turns on the stoker drops further and then reverses.

A. How far does it drop?

542 Q. I say within a hundred degrees.

A. That is your supposition.

Q. Whether it is my supposition, this Stokatherm would work that way, wouldn't it?

A. If you could find such an installation.

Q. And you do not know of any such installation?

A. No, I do not know any installation of that type.

Q. But you have admitted that they have furnaces down to such a point that the amount of heat lost up the stack is very little?

A. I said that all depends, unless the thermostat calls for heat. You made the supposition of 100 to 200. I did not.

Q. All right, basing it on my supposition, under that kind of a range, under that kind of a proposition, you do say that this would not operate all the time on the minimum temperature?

A. No, even then it would not.

Q. Why not?

A. Because if the basement temperature range changes, the air in the furnace is lowered and that is going to change your stack temperature, and then when the coil closes its circuit, if we assume, to simplify things, a half hour delay on the timer, you still don't know at what temperature

543 the stack is going to be when the stoker starts.

Q. But you do know that you must turn the stoker on, before the fire goes out, don't you?

A. Not necessarily. There are cases when the fire does go out.

Q. What kind of a control is that?

A. You make the supposition. I can tell what happens on the normal installation.

Q. And when I operate this stoker in this fashion, just between those two shoulders which operate the ratchet, would this Stokatherm JMV, if placed in a furnace which required no greater range than that which I have spoken of and demonstrated here, turn on that hold fire switch at the same temperature all the time?

A. No.

Q. Let us take it to the court here.

A. Because the problem in your question is not, does the bimetallic coil follow the temperature change? Yes, I will admit that. But when does it start the stoker? When does it start the stoker to prevent extinguishment of the fire? You have got a time interval in there.

Q. We will let the time interval down to as low as it will go. Let us say 15 minutes. Are you still pre-
544 pared to say it would not work that way?

A. Yes, I am prepared to say it would not work that way, because what is it going to drop down to in 15 minutes?

Q. It can drop in the same amount it dropped before, before it keyed in the timer.

A. But you don't know it is going to do that the same every time.

Q. I have given you a maximum.

A. I do know that.

Q. But the point is, the relationship of this shoulder to that key and this thermal element is fixed so long as you don't ratchet it; that is the supposition I am giving you.

A. Your Honor, it is all a supposition on his part that we are operating between 100 and 200 degrees, and an actual installation does not work that way.

Q. Now, I would like to ask you one other thing about the JMV. Let us suppose that the JMV is mounted in an ordinary room and that the time of the year is September or October. Do you have a stoker in your home?

A. No, I have not.

Q. Do you know anything from actually living with one how they work?

A. Yes, I know how they work. I have been in
545 many homes that have them and watched their operation.

Q. Do you know that in the mild days of fall and of spring that it is the hold fire control which is the most

important part of the control system of a stoker installation?

A. Yes. Our own catalogs say about 80 per cent of the time they operate on the hold fire control.

Q. All right. Now, tell me, suppose that the room thermostat calls for heat, as it will do during the night, or six-thirty or seven o'clock in the morning—that is this one right here—and it gets up your house to 70 or 75 degrees. Now, as I understand your statement about that JMV, assuming that the room thermostat does not call for heat all of the rest of the day, where will this stoker motor be tugging on—that is, at what temperature in the stack—where will this stoker motor be turning on, commencing at about noon?

A. It will vary. In every operation it will be at different temperatures, because the firing period varies. They do not fire at regular intervals. One time it might be firing for ten seconds; the next time it might be firing for two minutes; the next time it might be for a minute and a quarter, and your stack temperature varies with each one, and after that stack temperature variation has oc-
546 curred, when you start down to close the circuit you still have your half hour interval until the stoker again fires, and I am sure that I don't know and you don't know what the temperature is going to be.

Q. I am not asking you what the temperature is going to be. I am asking you whether after two or three hours subsequent to the last call by the room thermostat this JMV will not be cycling regularly so that you could chart it on a chart, where it cuts in the stoker and where it cuts off, and those temperatures in that line will be approximately level?

A. No, that is not correct.

Q. Before I forget it; Mr. Schultz, what systems for controlling stokers are in existence for which you supply controls, for controlling hold fire operations, for which you supply controls? I will assist you. There is the timer system. There is this flue temperature responsive system, and I believe you have a system responsive to light, isn't that right?

A. Not for beginning stoker fires, no.

Mr. Moore: If your Honor please, the witness has not testified that he has supplied electric switches or instruments for other stokers, that I know of.

Mr. Stone: He testified they had switches for timers very early, some time or other.

Mr. Moore: Timers for coal stokers?

Mr. Stone: Yes, timer systems. It is shown in all of the literature.

Mr. Moore: I have no objection to his answering that question.

The Witness: A. I still don't exactly get your question.

Mr. Stone: Q. The Mercoid Corporation supplies controls for at least two different systems for keeping a stoker burning, doesn't it?

A. Yes.

Q. One of these systems is the timer system, where the stoker is turned on every 30 minutes or 40 minutes, whatever you set it at, and the other system is this so-called combination flue temperature response, and timer system, isn't that right?

A. Yes, that is correct.

Q. So that there are on the market two different systems for accomplishing this same result?

A. Not exactly the same results, no.

Q. I say approximately the same result, keeping a fire from going out?

A. Maintaining a fire, yes.

548 Q. Yes, there are two systems. And The Mercoid Corporation has engaged in supplying controls for both, isn't that right?

A. Yes, that is correct.

The Court: Suppose we take a recess here for about ten minutes.

(A short recess was here had, after which the proceedings were resumed as follows:)

549 Mr. Stone: Q. How many patents does The Mercoid Corporation own?

A. I would not be in a position to answer that question.

Q. How many patents does Mr. McCabe own?

A. I also could not answer that question.

Q. Well, do they have a hundred?

A. I could not definitely answer that. I have not followed the patents.

Q. You read into the record here certain notices that were on literature of the Minneapolis Honeywell Regulator Company and the Detroit Lubricator Company, did you not?

A. Would you repeat that question, please?

(The last question was read by the reporter as above recorded.)

A. Yes, I did.

Q. And that literature related to the use of controls manufactured by either one of those companies in certain patented systems, is that not right?

A. Yes, that is correct.

Q. I show you Plaintiff's Exhibit 21 and ask you whether or not you prepared that exhibit.

Mr. Freeman: Is that a Mercoid exhibit that you are referring to?

550 Mr. Stone: Yes.

The Witness: A. No, I had nothing to do with the preparation of that exhibit.

Mr. Stone: Q. Will you read the last six lines in the bottom right hand side of that exhibit? Read it so his Honor can hear.

A. That reads: "Controls shown in this bulletin are covered by patents numbers 1,521,638, 1,598,874, 1,640,869, 1,644,935, 1,658,013, 1,687,842, 1,705,989, 1,734,015, 1,734,016, 1,752,957, 1,757,436, 1,817,634, 1,834,288; others pending.

"The right to use, for domestic or industrial heating, the oil burner system covered by patent No. 1,473,120 is granted only when Mercoid pressure or low water controls are used in connection therewith."

Q. That patent No. 1,473,120 is a system patent, is it not?

A. I could not tell you.

Mr. Stone: Does your Honor care to see this? (Handing document to the court.)

Q. Mr. Schultz, in Plaintiff's Exhibit 40 is the room thermostat and the stack control in parallel with respect to the stoker motor?

A. Yes, they are.

551 Q. In Plaintiff's Exhibit 41 is the room thermostat and the hold fire switch in parallel with respect to the relay switch which starts the stoker motor?

A. Yes, they are.

Q. In Plaintiff's Exhibit 45, which is the Stokatherm JMV, is the hold fire switch and the room thermostat in parallel with respect to the relay which starts the stoker motor?

A. Yes, they are.

Q. In Plaintiff's Exhibit 39 is the room thermostat and

the M-61 in parallel with respect to the relay which starts the stoker motor?

A. In that drawing, which I understand was prepared by Mr. Cook, they are.

Q. Now, it is my understanding that on your direct examination you said that The Mercoid Corporation would recommend connecting the M-61 directly from the hot line through the M-61 to the hot line of the stoker motor, that is, in series with the stoker motor, is that right?

A. No, I did not say it that way. I said that the M-61 control would be connected in parallel with the motor switch in the V2 3A relay so that the M-61 when it closed its circuit would directly handle the full current of the stoker motor.

552 Q. And that would make it in parallel with the room thermostat, wouldn't it?

A. No, no.

Q. The M-61 when hooked that way would still be in parallel with the room thermostat with respect to the stoker motor?

A. No, it would not be. It would be in parallel with the motor switch of the V2 3A relay. The room thermostat, when it closed its circuit, would operate that motor circuit.

Q. Well, the net result, however, would be quite the same, would it not?

A. The net result would be the same, yes.

Q. And the only reason it does not lie in parallel in your arrangement, or the arrangement recommended by The Mercoid Corporation, would lie in the fact that the room thermostat functions directly through the secondary which functions this switch which it is in parallel relationship with, the hold fire switch, is that right?

A. Yes, that is correct.

Q. Now, Plaintiff's Exhibits 40, 45 and 41, —that is this one, and this one, and this one (indicating exhibits), —do correctly portray diagrams which The Mercoid Corporation had gotten out at one time or another with

553 respect to the three controls, M-61, the TJV and the JMV?

A. I believe that is correct.

Q. And those diagrams were usually put or sent out through the mail, were they not, at times?

A. I believe all of those diagrams are shown in bulletins which have been offered in evidence.

Q. And those bulletins were sent out to the trade and they were also included right in the control in the box in which the control was shipped?

A. Yes, that is correct.

Q. I want to make sure of one thing about what happened in 1938. You received instructions in 1938 to stop making the M-61 control, is that not right?

A. Some time about that time. It may have been a little earlier, but I am not certain. But it was around that time.

Q. Did you receive instructions to stop making the M-51 control?

A. No, we are still making the M-51 control.

Q. So apparently the difference between the M-51 and the M-61 control was sufficiently great to stop the one and not to stop the other?

A. I do not know what the difference was. I
554 merely received orders to notify all of our distributors and sales force as well as the factory that that instrument was out of production.

Q. On page 361 of the record you told the court that there were three uses of the M-61. The third use was as an out fire control. Is that correct? Do you recall it?

A. Yes; I qualified that as being a slight modification of the M-61, and that it had been designated as the M-63.

Q. Now, switches that actually bore the numeral M-61, therefore, were recommended to the trade according to you for just two purposes; the M-63 was recommended to the trade for the other purpose?

A. That is after the designation M-63 had been arrived at. Prior to that time this had been called M-61 and the modification of changing the switch position so that it would operate as an out fire control was taken care of when orders were received, but they were still designated as the M-61 for several years until the volume built to a point where we could stock that item, and in that case we designated that instrument as the type M-63.

Q. You mean that for several years the M-63 was not shown in some of your literature, in 1934 and 1935?

555 A. I would have to check the literature to be sure on that.

Q. In any event, the M-61 on the literature which you were showing to us was used for only two purposes, and those are the two purposes which you stated here; first,

to prevent extinguishment of the fire, and, secondly, as a high temperature control, is that right?

A. That is correct, yes.

Q. Did the Mercoid Corporation ever recommend in a diagram the use of an M-61 for that second purpose, which diagram did not show its use for the first purpose?

A. I do not believe we ever did, because the two would tie together.

Q. I am not interested in the reason. The two would tie together?

A. That is right, yes. What I mean is, if you were going to use an M-61 as an off temperature stack control in connection with a stoker system—

Q. You have answered the question.

A. —then you would use the M-61 as a fire maintaining control also.

Q. Have you ever seen Mercoid installations in the field?

A. Yes, I have seen many installations in the field.

556 Q. Were they installed in the way they were supposed to be installed?

A. Not in every case, no.

Q. Did you tell them that they ought to install them the way you directed them to?

A. We also recommend that our wiring diagrams be followed, but they are not always followed.

Q. Did you ever help fix up any of them so they would work; so that they were properly installed?

A. Yes, I have supervised and made recommendations and supervised the change overs in the field so they did accord with Mercoid recommendations in order to overcome field difficulties.

Q. And that is the preferred way, in accordance with your recommendation?

A. I am sorry; I did not get your question.

Q. And have them make them in the Mercoid—have them change their installations to accord with the Mercoid instructions, is that right?

A. Yes, that is correct. When the controls were not functioning properly we would have them changed to hook up to comply with our recommendations so they would work satisfactorily.

Q. So that when they are put in, in accordance

557 with the Mercoid instructions, they are supposed to function properly, is that right?

A. That is correct, yes.

Q. In regard to Plaintiff's Exhibit 37, did you say on direct examination that this exhibit shows the stoker circuit located in the line, or directly connected to the line?

A. Through the relay V2-3A.

Q. And is that in accord or contrary to your recommendations?

A. That is contrary to the recommendations of The Mercoid Corporation.

Q. For what reason?

A. For the simple reason that the M-51 warm air limit control is shown connected in the low voltage circuit so that when this M-51 control opens its circuit it depends upon the opening of the low voltage V2-3A relay in order to stop the stoker motor. Now that M-51 control in itself has the same electrical capacity as the relay and can be placed directly in the circuit feeding to the stoker, so that it does not depend on satisfactory operation of the relay to shut down the stoker in the event of excessive temperature.

Q. I understand your point. Your point is simply
558 that the safety limit switch should be in advance of the stoker motor circuit, is that right?

A. Yes, that is correct.

Q. But the fact that it happens to be shown here as it is does not impair its operability at all?

A. As long as the system remains in perfect connection, but there is still a fire hazard there which is not necessary.

Q. I understand that, Mr. Witness. We just want to have the judge understand that the system does work. On direct examination on Plaintiff's Exhibit 39 you criticized this exhibit, among other reasons, because the limit switch, you said, was not on the hot side of the line.

A. Yes, that is correct.

Q. It would function the way it is, though, would it not?

A. It would function that way, but it is incorrect.

Q. All right, that is enough. It is not the approved way, but it would function?

A. It would function that way, yes, but I would not permit it in my home.

Q. It would be very simple to alter the connections to show the limit switch in the fashion which you say 559 is preferred?

A. It would be very simple, but I might mention that if that hook-up were employed, say, in connection with an oil burner, while it would be simple to make the change, if that change were not made it would be very hazardous, and it could be hazardous in connection with the stoker; that is, in creating a definite fire hazard. While it is simple to change, that is one thing, but it is not shown correctly in the drawing.

Q. When you prepared these various circulars on the M-61, the JMV and the TJV did you make the tests yourself from which you got the information?

A. Well, the information leading up to the preparation of any of Mercoid's literature carries over many months during the development stages of controls and the field tests that are made prior to putting the instrument into production.

Q. I understand, Mr. Schultz, but do you make the tests yourself?

A. I follow carefully all the tests. There are many engineers in the company that conduct the tests, and all I have to do is to follow the result of those tests. I do not do the actual work myself, no.

Q. Do you personally follow the field tests so that 569 you know what the tests are and what they show?

A. I follow field tests that are made, yes, and also the laboratory tests.

Mr. Stone: That is all.

Mr. Moore: I would like to ask a few questions on redirect.

*Redirect Examination by Mr. Moore.*

Q. Mr. Stone produced an M-61 with a steel well. Are there any patent numbers on that name plate?

A. Yes. That instrument shows patent numbers 1,757,436, 1,752,957, and 1,834,288.

Q. And that is the patent that you referred to in explaining the M-51, is it not?

A. Yes.

Q. You were asked quite a number of questions on the steel well. Was the steel well always employed from the very first on an M-61?

A. No; the M-61 was placed in the field first without that protecting well, and later the well was made available. However, the instruments were offered for sale both with and without. It was optional with the dealer or manufacturer whether they wanted to purchase the well.

561 Q. I will ask you to refer to Defendant's Exhibit K, which is dated 2-8-31, and I believe you testified that on page 7 the M-61 was illustrated, did you not?

A. Yes, that is correct.

Q. Does that have a steel well?

A. No, that is not shown with a stainless steel well.

Q. Now I ask you to look at Defendant's Exhibit L, Mercoid Bulletin No. 240, dated March, 1933. Does that show the steel well?

A. That shows the instrument without the steel well and also with the steel well.

Q. Will you turn that over? Is there any difference in prices under your price list there between the M-61 with the steel well and the M-61 without the steel well?

A. Yes. That reads, "Type M-61, 50 degrees to 650 degrees, plain flange, without well, single pole single throw 10 ampere, $16."

Then the next item is, "Type M-61, 50 degrees to 650 degrees, improved flange with stainless steel well," and the price for the single pole single throw 10 ampere type is $20.

Q. I think there are some instructions under the heading, "Ordering Data," are there not?

562 A. Yes; that reads, "When ordering specify type number instrument, electrical capacity, and type of mounting flange desired. Unless otherwise specified, instruments are furnished single pole, 10 ampere, with improved type mounting flange and stainless steel well."

Q. Now I ask you to look at Defendant's Exhibit M, Mercoid Bulletin 240-B of October, 1935. Do you find the same illustration of the M-61 in this later bulletin as you did on the first one?

A. Yes, identically the same illustrations.

Q. But that is not the same as the first illustration in your bulletin A-14?

A. No; bulletin A-14 only showed the instrument without the stainless steel well.

Q. Now is there anything on the back of this Defendant's Exhibit M which would indicate that you sell both the M-61 with and without the steel well?

A. Yes; this Defendant's Exhibit M, which is bulletin 240-B, was a supplementary bulletin to 240 and shows only a change in the list price of the instrument. On the back page that lists type M-61 or M-63, 50 to 650 degrees, plain flange, without well, at the single pole, single throw, 10 ampere list of $14.50. It also lists the type M-61 or M-63, 50 degrees to 650 degrees, improved flange with 563 stainless steel well, at the list price of $18.50.

Q. I believe you testified on cross-examination that it was the thermal element in the M-51, the M-61, the TJV Stokatherm and this later one that was the prime mover, you might say, for starting all of the different switches and mechanisms going, is that right?

A. Yes, that is correct.

Q. Now, are those the only switches put out by Mercoid to employ a bimetallic metal coil for starting the operation of the instrument?

A. No. There was the type M-1 Pyratherm, the type M-51, M-52, M-53, M-61, M-63, M-55, M-56, M-57, type SM Pyratherm, type SMI Pyratherm, type KM Pyratherm, type KMI Pyratherm, type JM Pyratherm, type JMI Pyratherm.

Q. I think that will be sufficient. Now I ask you to look at this Plaintiff's Exhibit 21. Is that it in front of you there?

A. No, this is 12.

The Court: Here it is. (Handing document to the witness.)

A. Thank you.

Mr. Moore: Q. I believe you stated you did not have anything to do with that.

A. No, I did not prepare that bulletin.

564 Q. Is that a regular bulletin, instruction sheet, or catalog, or what is it? There is only the photostat of that one page.

A. Yes. And I can identify this bulletin.

Q. Is it a bulletin, or what is it?

A. It was a sales bulletin, what we called a flyer bulletin; that is, part of a bulletin that was printed in colors and was sent out to the trade to announce quickly some condition that we wished to have the trade advised of. This particular bulletin was prepared by the advertising department, but at the time this bulletin was put out I was in New York and the bulletin was printed without any direct supervision from any officers of the company.

Q. Do any of the other publications put out, to your knowledge, include any notice like the notice that you read from down there?

A. No, that is the reason I can identify this bulletin, because—

The Court: Your answer is "No." What is the next question?

Mr. Moore: Q. Are the suggested wiring diagrams put out by Mercoid the only manner in which a control or installation will operate?

565 The Witness: May I have that question again, please?

(The last question was read by the reporter as above recorded.)

A. No, there can be modifications from our recommended hook-ups that will accomplish the same result, but it may not take into consideration all the factors which we considered from a safety standpoint.

Q. Then they will work but they are not quite as safe as the one suggested by the Mercoid?

A. That is correct.

Q. And it does not mean you must follow the Mercoid diagrams to have an operative device?

A. No.

Mr. Moore: Redirect examination closed, your Honor.

The Court: How about you, Brother Stone, have you any more questions?

Mr. Stone: I just want to get one thing straigh'

The Court: Straighten it out in about two minutes. We want to finish with this witness.

*Recross Examination by Mr. Stone.*

Q. Do I understand the Mercoid gets four bucks for each one of these steel wells?

566 A. That was the list price applying back in, I think, 1933.

The Court: I suppose you patent lawyers figure four bucks mean four dollars.

Mr. Stone: Four dollars, yes. I would like to have that changed in the record.

The Witness: Stainless steel is not available today. If we were to furnish it now we probably would have to get plenty more.

Mr. Stone: Q. Didn't you just state that the M-61

after a certain date was sold with or without the stainless steel well?

A. Yes, that is correct.

Mr. Stone: I call your attention, Mr. Moore, that the answer to interrogatory 14 says: "Unless specified by customer not to ship stainless steel well, it was necessary to so equip the M-61."

Mr. Moore: That is what I understood.

Mr. Stone: That is not what the witness said.

The Court: Let us get it straight here.

Mr. Stone: Q. Is it customary to put the stainless steel well on the M-61 unless the customer said otherwise, which is quite different from having the customer take an af-
567 firmative position in connection with a steel well?

A. You are correct in that, Mr. Stone.

Mr. Stone: I think that is all.

The Court: We will recess this case until Monday morning at 10:30.

Mr. Freeman: Mr. Moore, you have about five hours on Monday for your next two witnesses?

Mr. Moore: I do not know if I have five hours. I will put the first witness on, but I cannot predetermine the time or the temperature of the cross-examination.

The Court: Who is going to cross-examine the witness?

Mr. Moore: I do not know.

Mr. Stone: Mr. Freeman or Mr. Bair will probably cross-examine for Minneapolis-Honeywell and I will cross-examine for Mid-Continent.

The Court: How long will your direct take?

Mr. Moore: The first witness will take about an hour, and a half or two hours.

Mr. Freeman: Is that going to be a witness directed against Minneapolis-Honeywell?

Mr. Moore: Well, it will be directed to the occurrences affecting and in which both Minneapolis-Honeywell and Mid-Continent are involved.

The Court: Why do you make inquiry?

568 Mr. Freeman: So we will know whether or not we should get some of the executives of Minneapolis-Honeywell Company here on Monday or Tuesday.

The Court: How many witnesses do you say you have?

Mr. Moore: Two more.

The Court: I think you better not have them before Tuesday, but have them on Tuesday, because by the way I

see you folks work you will take at least a full day if you have two witnesses up here.

Mr. Stone: They, of course, will not be expert witnesses.

The Court: Does that make any difference?

Mr. Stone: Presumably an expert is put on because it is helpful to the judge and the lawyer does not object if the judge does not object.

The Court: I do not like to object unless some lawyer objects; because you folks might properly say, "It is a wonder that fellow doesn't mind his own business."

We will see you all Monday morning.

Whereupon an adjournment was taken to Monday, September 15, 1941, at 10:30 o'clock a. m.

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|---|---|
| 569 Mid-Continent Investment Company, a corporation, and Minneapolis Honeywell Regulator Company, vs. The Mercoid Corporation. | Before Igoe, J. |

Monday, September 15, 1941.
10:30 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Bair, Freeman, Moore.

The Court: When do you think you will finish, gentlemen, do you know?

Mr. Moore: I could not tell you definitely, your Honor. I have two witnesses. I think Mr. Owens will come on next, and he will take about an hour and a half on direct examination. Mr. Courteol, who follows him, will take about an hour or an hour and a half. He will be shorter than Mr. Owens.

The Court: Wednesday, is it?

Mr. Moore: It depends altogether upon the amount of cross-examination.

Mr. Freeman: If Mr. Moore will keep his word of an
570 hour and a half and one hour for his two witnesses, we will be through by Wednesday.

The Court: I am just inquiring, in order to set some other cases.

Mr. Freeman: Yes.

Mr. Moore: Mr. Stone, are you going to introduce the physical exhibit M-61, that you have here in court.

Mr. Stone: The control M-61, manufactured by the defendant, The Mercoid Corporation, is offered in evidence as PLAINTIFFS' EXHIBIT 40.

(The exhibit was so marked.)

Mr. Moore: In order that the court may have the physical exhibits referred to to compare with the physical exhibit of M-61, I offer in evidence a physical specimen of the Mercoid M-51 control referred to by the witness Schultz in relation to the Mercoid catalog H-5 1929. This is offered in evidence as DEFENDANT'S PHYSICAL EXHIBIT E-1.

(The exhibit was so marked.)

Mr. Moore: I also offer in evidence a physical exhibit of the Mercoid M-1 Pyrotherm, referred to by the same witness, in regard to Mercoid catalog H-5 1930, as DEFENDANT'S PHYSICAL EXHIBIT H-2.

(The exhibt was so marked.)

571 Mr. Moore: I also offer in evidence the physical exhibit of the Mercoid M-55 control referred to by the same witness in regard to the Mercoid Bulletin 230, as DEFENDANT'S PHYSICAL EXHIBIT K-2.

(The exhibit was so marked.)

Mr. Moore: Before I begin with my witness, your Honor, the contracts or licenses which have been introduced by other parties are going to be referred to in the testimony of this witness and the witness succeeding him. I have here bound copies and each is properly identified for the use of the court.

The pleadings include a number of letters written by the Cross Coal-O-Matic Company, the predecessor, in title Cross patent in suit, to the defendant; correspondence between the defendant and Mid-Continent Investment Company and correspondence between the defendant and Minneapolis-Honeywell Regulator Company, as well as letters written by Mid-Continent Investment Company to coal stoker manufacturers and the notice of the Minneapolis-Honeywell Regulator Company sent out to the trade have been admitted as genuine, and the statements made therein, as authorized under Rule 36.

The defendant, in his counterclaim, averred that plaintiff Mid-Continent Investment Company had deliber-
572 ately conspired with its licensees and they have wilfully and wrongfully conspired among themselves to substantially lessen competition and establish a monopoly in the sale in interstate commerce of products or articles in simulation of the products and articles sold by the defendant, and previously sold by its predecessor in business, the Federal Gauge Company, for more than fifteen years past, and these unlawful acts have caused great injury to the business of the defendant and to the financial damage of the defendant.

The next witness for the defendant will be Mr. James W. Owens, vice-president of The Mercoid Corporation, who will testify as to the circumstances surrounding the correspondence above referred to. He will testify as to the effect of these letters and notices sent by Mid-Continent Investment Company and Minneapolis-Honeywell Regulator Company to the trade, as well as to certain circumstances surrounding the granting of the exclusive license to Minneapolis-Honeywell Regulator Company and to other matters.

Mr. Owens.

Mr. Stone: Your Honor, do you want to hear an objection on this line of testimony now, or shall I wait until they start to ask the questions?

573 The Court: I might as well hear you now.

Mr. Stone: All right.

I wish to speak first with respect to all letters and evidence relating to offers of settlement made during the year 1940.

We object to the admission of any testimony or any of those letters, for the reason that they are not proper evidence in a trial.

After the mandate had come down in the Kansas City case we attempted to negotiate a settlement with The Mercoid Corporation. Those negotiations commenced I believe the first letter was in January, 1940, the mandate having come down in December, 1939, a month or two earlier.

That correspondence went back and forth for a matter, I believe, of seven or eight months, terminating in a couple of conferences in Mr. Moore's office or our office in July and August of 1940, and the whole thing blew up.

Now, the letters that Mr. Moore has already placed in the pleadings here, I believe, number a half a dozen or so, and are just those letters which seemed to him to bear out his point. There are many other letters and there is a great deal of testimony that can be adduced on 5:4 this, as to just what took place.

Now, if your Honor will refer to Federal equity rule 68—

The Court: Federal equity rule?

Mr. Stone: I mean one of our new rules of Federal procedure—I am sorry—68.

The Court: Yes.

Mr. Stone: I wish to read this rule for the purpose of showing the policy of the Federal courts towards such offers of settlement. This rule says:

"At any time more than ten days before the trial begins a party defending against a claim may serve upon the adverse party an offer to allow judgment to be taken against him for the money or property or to the effect specified in his offer, with costs then accrued. If within ten days after the giving of the offer the adverse party serves written notice that the offer is accepted, either party may then file the offer and notice of acceptance, together with proof of service thereof, and thereupon the clerk shall enter judgment."

This is the important sentence:

"If the offer is not so accepted, it shall be deemed 575 withdrawn and the evidence thereof is not admissible."

Mr. Moore: There has been no judgment or decision against The Mercoid Corporation, your Honor.

The Court: What did you say?

Mr. Moore: I say there has been no judgment or trial of The Mercoid Corporation. I do not think that rule applies.

Mr. Stone: The rule applies as showing your Honor the admissibility of evidence of offers to settle before a suit is instituted. I do not see how that rule can be viewed in any other way.

Now, Wigmore on Evidence, in his new book, Volume 4, Third Edition, sets out the United States practice on this matter. And it is perfectly clear. If your Honor would care to read this lengthy set of decisions here—they are all Federal cases—it is perfectly clear that such evidence is not admissible here. It does nothing but fill up our

record here and the evidence does not help us find out the truth of the matter at all.

We attempted to reach a settlement agreement here; we did not reach it; we thought we had reached it at one time, and then the defendant refused to proceed. The
576 defendant now proposes to use all of this correspondence. I think there are probably twenty or thirty letters altogether or twenty or thirty pages of letters altogether and a great many conferences. To my recollection there were one or two in our office, and I think there may have been one or two in Mr. Moore's office.

Mr. Moore: May it please your Honor,—

Mr. Stone: I do not see how any of that can be introduced here. The Federal courts are perfectly clear on the fact that offers of settlement are not admissible. What do they prove? After all, we were trying to settle a case. Their only use is as an admission against us. That is the only use. But they do not prove that at all.

Wigmore brings that out entirely clearly. After all, if we are trying to settle something and the other fellow says something we do not agree with, still if we are trying to settle, we may not deny what he says.

I have here one citation that is right on the nose, that of New York Life Insurance Company against Rankin, 162 Federal, 1, 3, which said:

"Correspondence between attorneys during an unsuccessful attempt for a compromise excluded."

That is all this amounts to here, and that is the
577 first thing he proposes to put in evidence.

Mr. Moore: He does not know what I am going to put in evidence, your Honor.

Mr. Stone: Mr. Moore, you just said you are going to put in evidence all of those letters, in the record, relating to the settlement agreement or attempt to reach a settlement agreement in 1940. Didn't you say that?

Mr. Moore: I did not say that. I said I will refer to the letters already in the pleadings and accepted by the parties as being genuine. I did not say how we are going to use them or anything about that. You are trying to predetermine my evidence.

Mr. Stone: I am trying to keep out from this case all of that correspondence, the evidence of all of those meetings which we had trying to reach a settlement, which in

the end blew up. I do not see what possible materiality it can have in here.

The Court: What do you say as to that suggestion, Mr. Moore?

Mr. Moore: May it please your Honor, the Mercoid, in its counterclaim alleged that Mid-Continent tried to force it into paying it $5,000 without any legal right. Now, I am not going to go into all of these conferences.

I am not going to put in a lot of letters. I am going to
578 cut the evidence down just as short as possible, and I don't think your Honor can pass on that question until you see what I am trying to present.

The Court: Whatever evidence you are going to present, from your statement just made, is based upon the idea that it has nothing to do with the compromise at all?

Mr. Moore: I am not going to bring up the question of the compromise. It appears in one of the letters.

Mr. Freeman: The letter is what he is objecting to.

Mr. Stone: That is what I am objecting to, your Honor.

The Court: You say it is a compromise and he says it is not. He says you are trying to bludgeon him into doing something. You say it is a compromise.

Mr. Stone: Your Honor, let us be sure we understand the situation here. The Mercoid Corporation defended that suit down in Missouri.

The Court: Yes.

Mr. Stone: After the law suit and the Circuit Court of Appeals affirmed the decision of the trial court, the question was, what was going to be done next; in other words, we were going to bring a suit against the Mercoid for contributory infringement. Instead of bringing that suit we wrote a series of letters—

Mr. Moore: Threatening letters, your Honor.

579 Mr. Stone: (Continuing.) —to The Mercoid Corporation. We have no objection to reading the letters.

The Court: They are all in the pleadings.

Mr. Stone: They are all in the pleadings, yes. Those letters were entirely for the purpose of settling this suit.

The Court: He says they are not. In one letter I read from your memorandum here, you express surprise that they turned down your proposition. They take the position they never made you any proposition.

Mr. Moore: Not necessarily. They did make a proposition to them, and it is referred to in one of the letters.

But the Mid-Continent wants us to pay $5,000 and tried to force us into paying it, and we said they had no right to it. It is all circumstantial evidence, and you cannot prove a conspiracy or you cannot prove the intent of a conspiracy except by circumstantial evidence. The letters are all in here and that is all I am referring to. I am not going to take a lot of testimony in connection with the letters.

Mr. Stone: Well, I will make the objection when they are brought up, when we see what purpose they are being offered for.

The Court: All right. Swear the witness.

580 JAMES W. OWENS, a witness called on behalf of the defendant, having been first duly sworn, was examined and testified as follows:

*Direct Examination by Mr. Moore.*

Q. Please state your name, age, residence and occupation.

A. James W. Owens, age 49, residence 4448 North Mozart Street, Chicago. I am executive vice president of The Mercoid Corporation.

Q. How long have you been a vice president of The Mercoid Corporation?

A. Since about 1921.

Q. Was it The Mercoid Corporation then?

A. No. At the outset the name was the Federal Gauge Company, and that was changed in 1928 to The Mercoid Corporation.

Q. Then you have been a vice president of The Mercoid Corporation and its predecessor since about 1921, is that correct?

A. That is correct.

Q. What department did you supervise as a vice president?

A. Primarily sales.

581 Q. Was that in 1921?

A. In 1921.

Q. And at the present time?

A. Executive vice president in charge of sales.

Q. As vice president in charge of sales are you ac-

quainted with the custom of the corporation in marking its actual physical products when they leave the factory?

A. I am.

Q. And what is that practice?

A. To show serial numbers to indicate the time at which the control was shipped out and the number of controls of that type made up to that time.

Q. I will show you the Mercoid M-61, introduced in evidence this morning as Plaintiffs' Exhibit 49, and ask you if you find a name plate on there and if it bears a serial number?

A. The serial number is rather indistinct. It is M-73778. Yes, M-73778.

Q. Is there a type number on there as well?

A. M-61.

Q. I show you the M-51 Mercoid control introduced this morning as Defendant's Exhibit E-1, and ask you if your find a name plate on there?

A. I do.

582 Q. Does it bear a type number and a serial number?

A. M-51, serial No. M-99515.

Q. I show your physical exhibit of the M-1 Pyrotherm, Defendant's Exhibit H-2, and ask you if that bears a name plate with a type number and serial number?

A. M-1, serial No. M-31348.

Q. I also show you a Mercoid M-55 control, introduced in evidence this morning as Defendant's Exhibit K-2, and ask you if that bears a plate with a type number and serial number?

A. This is the M-55, type M-55, serial No. M-339174.

Q. Now, can you explain to the court how these serial numbers in your records are established and run?

A. The serial type letter M indicates the particular type of controls covered by that serial number, such as the M-1, M-11, M-51, M-52, M-53, M-55, M-61, M-62, M-63 and perhaps some others.

Q. Now, are there serial numbers given to each specific sub-title, like the M-1 and the M-61?

A. They are all included in the M's and that 73778 would indicate the total number of M type of controls manufactured up until the time that that particular one was put on the market.

Q. Then if any M-1's had been manufactured prior
583 to the time this M-61 was manufactured, the M-1's would be included in the serial numbers on the M-61, is that correct?

A. That is correct.

Q. And the same as to the M-51's and the M-53's?

A. That is correct.

Q. Who is the president of The Mercoid Corporation at the present time?

A. Mr. Hugh Courteol.

Q. How long has he been president?

A. Since March, 1938.

Q. Who did he succeed?

A. He succeeded Louis B. Reed.

Q. Where is Mr. Reed now?

A. Mr. Reed is deceased.

Q. How long was he president?

A. He was president from—

Mr. Freeman: Mr. Moore, we do not intend to object to this, but if you are trying to shorten the record I might state that the witness Schultz has already testified to this, as to who was president and how long he was president. We have no objection, but after all there should be some finality to this.

The Court: Objection sustained.

Mr. Moore: Q. How long has Mr. Schultz been con-584 nected with the corporation?

A. Since 1925.

Q. That was when it was the Federal Gauge?

A. The Federal Gauge Company.

Q. And where was he located when he first joined the company?

A. The New York office.

Q. Where is he located at the present time?

A. The Chicago office.

Mr. Freeman: The same objection. That has all been answered and not questioned.

The Court: The same ruling.

Mr. Moore: Q. Do you recall when he came from New York to Chicago?

Mr. Freeman: The same objection.

The Court: Objection sustained.

Mr. Moore: Q. As vice president in charge of sales, do you know whether or not the Federal Gauge Company published bulletins or catalogs illustrating their devices, prior to 1925?

Mr. Freeman: The same objection.

The Court: I don't remember whether that has been asked.

Mr. Freeman: That has been answered by the wit-
585 ness Schultz.

Mr. Stone: The exhibits have not been introduced.

The Court: Objection overruled. He may answer this question.

The Witness: A. I do.

Mr. Moore: Q. Who was responsible for getting out that literature?

A. It was under my supervision.

Q. And still is?

A. Up until 1930, when Mr. Schultz was moved from New York to the Chicago office.

Q. Mr. Schultz referred to certain bulletins and catalogs in his testimony last week and they were marked for identification. You can identify these as being the literature of The Mercoid Corporation, which were prepared under your general direction?

Mr. Freeman: Mr. Moore, we will admit the bulletins were put out by the Mercoid Corporation, for convenience and the saving of time.

Mr. Moore: Very well.

Mr. Freeman: There is no question about them.

Mr. Moore: The exhibits marked for identification, as the record will show, are hereby offered in evidence and given the same letters and sub letters.

586 Mr. Freeman: We don't know what letters they are.

Mr. Moore: I am trying to cut it down. I am trying to save time.

Mr. Stone: Mr. Moore, these—

Mr. Moore: They have not been introduced in evidence and have not been proved.

The Court: They have been marked for identification.

Mr. Freeman: He is offering them now and there is no objection.

The Court: He says they are properly issued by this company and proved by the witness. All Mr. Moore is now asking is that they be admitted in evidence under the same number by which they were identified.

(The exhibits were so marked.)

Mr. Moore: Q. To whom did you sell Mercoid controls in 1925?

A. To the automatic heating field, to manufacturers, distributors, dealers, jobbers and so forth.

Q. Will you name some of the distributors you sold Mercoid controls to?

A. Well, we had such representative companies as the Crane Company, American Radiator Company, Accessory Division, which later was Detroit Lubricator Company.

Q. Was the oil burner field very large in 1925?

587. A. Yes, they were coming along in good shape about that time.

Q. Did you sell controls to the oil burner field?

A. We did.

Q. Did you sell controls for other heating systems besides oil burners?

A. Oh, we might have sold some for some coal fire jobs.

Q. That was in 1925?

A. That is right.

Q. What was the condition of the stoker business in 1925, that is, the automatic stoker for domestic heating?

A. There were a couple of companies manufacturing stokers then, but they had not attained any great degree of prominence.

Q. When was the first small domestic stoker for house heating brought into prominence, approximately what year?

A. Well, I would say the Iron Fireman came along pretty good about 1929, 1930.

Q. Was there any increase in the stoker business around 1930?

A. Yes, there was.

Q. Now, do you know what brought on this increase in the stoker business, this demand for domestic stokers around 1930?

588. A. Well, I would say primarily the inroads made by the oil burners on coal for domestic fuel consumption caused the coal operators to get together and start doing a little advertising of stoker coal.

Q. Did they ever produce a coal specifically made for a coal stoker before that time?

A. Well, I could not answer that, Mr. Moore.

Q. Did you have any controls on the market in 1929 or 1930, which were particularly designed for the stoker industry?

A. Not any other controls than what we had been regularly furnishing to the oil burner trade, such as room thermostats and pressure limit controls for boilers, temperature limit controls for hot water boilers, warm air limit controls for furnaces. They were all adapted for stoker application, the same as they were in the automatic heating field for oil burners.

Q. And that applied to the years 1929 and 1930, didn't it?

A. It did.

Q. I show you here Mercoid catalog No. H-5, 1930, and ask you if that catalog illustrates any controls that the Mercoid sold to the stoker trade around that time and that you know were used by the purchaser as a fire 589 maintaining control?

A. Well, I find the M-51, shown on page 24, the M-50 or the Figure 50 shown on page 25, and we also show on page 12 the M-1 Pyratherm.

Q. What one of those controls, to your knowledge, was employed in the stoker trade as a fire maintenance control?

A. The M-51.

590 Q. Have you any correspondence from a coal stoker manufacturer in the year 1930 which will show that this M-51 was used as a coal fire control?

A. We do have a letter from The Brownell Company, Dayton, Ohio, signed by Charles E. Wieland, purchasing agent, dated July 2, 1930, addressed to The Mercoid Corporation.

Q. Will you please read it. It is a short letter, is it not?

A. Yes.

"We are at the present time running a test on a small domestic stoker which uses a $\frac{1}{4}$ H. P., 220 volt A. C. 60 cycle single phase motor.

"We are desirous of securing a stack control with as great a range as possible; one that operates on the temperature of the flue gases in the stack. If desired, this could be connected across the line direct to the motor. Will you please advise just what you have to offer, price and delivery; also as stated above, the greatest range in temperature or the different ranges that you can control.

"We would also especially state that this instrument 591 should close on the fall of temperature and open on the rise of temperature. This is necessary."

Q. What is the date of that letter?

A. July 2, 1930.

Q. Is there anything on the face of this letter that indicates it went over your desk?

A. No, not on the face of the letter itself.

Q. Was there a carbon of a reply made to that letter in your files?

A. I found a carbon copy of a letter dated July 7, 1930, signed by H. A. Matthews, sales engineer, addressed to The Brownell Company, Dayton, Ohio, attention Mr. Wieland, apparently in answer to that letter.

Q. Now, will you please read that letter?

A. "In reply to your favor of July 2nd, we are enclosing bulletin describing our M-51 control which could be used under the conditions stated in your letter, providing the maximum temperature of the stack does not exceed 900 degrees."

Q. That will be sufficient. Now, did you get any further correspondence from Brownell relating to this subject matter?

A. I also have here a letter dated August 13, 1930, from The Brownell Company, Dayton, Ohio, also signed by
592 Mr. Charles E. Wieland, purchasing agent, addressed to The Mercoid Corporation, Chicago.

Q. That is a short letter. Will you please read it?

A. "Referring to your Figure M-51 furnace control, one of which was shipped to us last month for experimental purposes, find that there is a possibility of us using these in fairly large quantities. If we should adopt this control for use in connection with one of our small stokers would be able to use at least 500 and possibly 1000 of them within a year. We would, therefore, suggest that based upon a quantity of 500 to be taken out in lots of 25 within a period of one year that you let us have your rock bottom price."

Q. Was there a carbon of a reply attached to that letter?

A. This letter apparently I answered, because my initials are shown in the lower left hand corner, and the date is August 14, 1930, addressed to The Brownell Company, attention Mr. Charles E. Wieland, purchasing agent.

Q. Will you please read the first three paragraphs?

A. "We are in receipt of your favor of August 13th
593 and are pleased to note the M-51 Furnace Type of Control for stoker application meets with your approval.

"The list price of this control in the single pole type is $18.00, and we are pleased to quote you a discount of 50-10% in lots of 25 or more in a shipment.

"We are also pleased to make a further proposal not only on your Type M-51 Control requirements, but to include any other Mercoid Controls purchased during the

year, so that in the event of your purchasing 100 or more controls in the course of a year, an additional 1% discount will be credited to your account, on 200 controls 2%, and so on up to 1,000 controls, making a total discount of 50-10-10% in the event of 1,000 controls being purchased over a period of one year."

Mr. Moore: May it please your Honor, I believe there was something stated in the testimony of the Mid-Continent Investment Company as to the cost at which these controls were sold.

Q. Now, will you please tell the court when you have a list price of $18 and you give the maximum discount, how much that control costs the customer?

A. Seven dollars and twenty-nine cents net, less two 594 per cent for cash, a total of about $7.15 net.

Q. Did you hear anything further from The Brownell Company in regard to the M-51?

A. I have here a letter dated September 5, 1930, from The Brownell Company, signed by Mr. Charles E. Wieland, purchasing agent, addressed to The Mercoid Corporation, Chicago.

Q. That is a short letter. Will you read the first two paragraphs?

A. "Referring to the M-51 furnace control recently shipped us, will state that it has given fairly good results, but if we can obtain same with certain improvements, believe it would meet our entire requirements.

"We desire a control to cut in at approximately 150 deg. and to cut out between 250 and 600 deg. The cut out to be adjustable and in addition to take care of any possible break in current, would desire it to cut out on a light temperature say 100 deg. and stay out until reset by hand.

"Is it possible for you to furnish a control of this type?"

Q. Was there a reply made to that letter?

A. There was a reply made under date of September 9th.

595 Q. Who wrote the reply?

A. My initials are in the lower left hand corner, but I have reason to doubt that I wrote the letter. I believe it was written in my absence by my secretary.

Q. Will you please read the three paragraphs? It is a short letter.

A. "We have your favor of the 5th, and wish to advise, when writing you under date of August 14th regard-

ing the M-51 Furnace Control, we had in mind equipping this Control with the same type of stem that we employ in our M-1 Mercoid Pyratherm.

"The M-53 Fan Control with a range of 50 to 600 would very easily take care of the intermittent operation of the stoker, cutting in at any point above 100 and cutting out at any higher point at which it would be set.

"However, if a third operation was required to take care of any possible break in current, this would require an additional Control, which would be set at a point below the Control arranged for intermittent operation, so that the temperature in the stack dropping to the lower point, this instrument would act as a complete cut off requir-
596 ing manual reset. The M-53 as supplied is fully automatic. When supplied semi-automatic with hand reset there is no extra charge."

Q. Where did this correspondence come from?

A. From the company files, under my supervision.

Q. Is there anything in the carbon of July 7, 1930, that shows it has gone over your desk?

A. Yes. There is a bring-up date on that carbon in my handwriting.

Q. And is there anything on the other letters or carbons that indicate that you had anything to do with it?

A. On the letter of August 13th, which I answered under date of August 14th, the list price and the discounts are written in my handwriting on the original of this letter.

Mr. Freeman: Mr. Moore, we are not questioning these letters as having come from the files of The Mercoid Corporation.

Mr. Moore: I don't know—

Mr. Freeman: If this witness is going to continue to testify to things he doesn't know about, we are going to object to it.

Mr. Moore: Object to it then.

Mr. Freeman: Right now we are not objecting to
597 the letters as having come from the Mercoid files.

Mr. Moore: Photostatic copies of these letters referred to by the witness, letter of The Brownell Company dated July 2, 1930, carbon of letter addressed to Brownell dated July 7, 1930, Brownell letter dated August 13, 1930, and carbon copy of reply thereto dated August 14, 1930, are introduced in evidence as DEFENDANT'S EXHIBIT X.

(The exhibits were so marked.)

Mr. Freeman: If you are not introducing them as against Minneapolis-Honeywell I will keep quiet, but I understood you were.

Mr. Moore: Minneapolis-Honeywell did not have anything to do with this back in 1930, did it?

Mr. Freeman: Let me ask you, Mr. Moore, in introducing the letters from The Brownell Company and the exchange of correspondence as between Brownell and Mercoid, are you going to use any of the substance of those letters in any of your counter claim allegations against Minneapolis-Honeywell?

Mr. Moore: Not that I expect to, at the present time.

Mr. Freeman: Well, then—

Mr. Moore: I don't know. I don't know what questions you are going to ask him.

598 The Court: What is before the court now?

Mr. Moore: I don't think there is anything.

The Court: Ask another question and let us get ahead.

Mr. Moore: I will give you photostats of these exhibits.

Q. Did you personally handle the account of The Brownell Company after this correspondence?

A. I did.

Q. Did you ever see the M-51 applied to the heating systems as put out by Brownell?

A. I can't recall that I ever did.

Q. Have you any knowledge how the M-51 was applied to the Brownell stoker?

A. From correspondence and my conversation with Mr. Wieland, I know that the control was mounted in the flue at a point where it would come in contact with the fluctuating stack temperature.

Mr. Bair: That is objected to as obviously stating a fact outside of the witness' knowledge and I object to it for that reason. He says he knows from correspondence.

The Court: Objection denied.

Mr. Moore: Q. Have you looked through your files to determine whether or not you had any correspondence
599 with other coal stoker manufacturers or distributors at that time relating to the Mercoid controls for use by the coal stoker trade?

A. I did.

Q. I show you a letter here from the American Radiator Company, dated June 18, 1929, and ask you if that is the one you had reference to?

A. It is.

Q. By whom is it signed?

A. C. J. Swan, accessories division, assistant manager.

Q. That is a very short letter. Will you please read it?

A. "Will you please send to: The Cross Coal-O-Matic Stoker Company, 700 Baltimore Avenue., Kansas City, Mo. 1—cut of each of the following: M-51 Furnace Control front view, same size as in your H-5 catalog. Also one cut of Figure 37 hot water boiler control same size as in H-5 catalog."

Q. To whom is it addressed?

A. To The Mercoid Corporation, Chicago.

Q. And dated?

600 A. June 18, 1929.

Q. Is there a reply or a carbon attached to that?

A. There is a carbon copy dated June 22, 1929, signed by Mr. L. J. Schanz, advertising manager of The Mercoid Corporation, addressed to the Cross Coal-O-Matic Stoker Company, 700 Baltimore Avenue, Kansas City, Missouri.

Q. Will you please read it? It is very short.

A. "We have a request from Mr. C. J. Swan of the American Radiator Company to forward to you one cut each of our Fig. M-51 and Fig. 37 controls as shown in our catalog of controls for heating equipment. You should receive these cuts within a few days.

"If there is any further information or service you desire we will be glad to furnish it."

Q. Was there anything attached to that carbon that will show that those letters were sent?

A. There is a memorandum on a plain sheet of paper with a shipping stamp showing that a cut of the M-51 and Fig. 37 controls were shipped parcel post under date of June 24, 1929.

Q. Where did this come from?

A. From the company files under my supervision.

Mr. Moore: A photostat of the letter from the
601 American Radiator Company to The Mercoid Corporation dated June 18, 1929, a photostat of the carbon attached thereto and a photostat of the shipping notice are introduced in evidence as DEFENDANT'S EXHIBIT Y.

(The exhibit was so marked.)

The Court: We will take a recess for ten minutes.

(A short recess was here had, after which the proceedings were resumed as follows:)

Mr. Moore: May it please your Honor, in checking over

the record, the exhibits which I offered have not been properly identified. May I read the letters in?

The Court: Yes.

Mr. Moore: The exhibits offered are DEFENDANT'S EXHIBITS A, C, C-1, D, E, G-1, and H.

Also in offering the letters from The Brownell Company I omitted the letter from Brownell Company dated September 5, 1930, and the carbon of the reply of September 9, 1930, in DEFENDANT'S EXHIBIT X.

(The exhibits were so marked.)

Q. Did you ever hear from any stoker manufacturer direct?

Mr. Freeman: What year, time or period are you talking about, Mr. Moore?

Mr. Moore: In the early days, leading up to that. I want to find out when he first heard from a distributor, 602 and now I am asking what he heard from the stoker manufacturers.

The Witness: A. Yes, we heard from the Cross Coal-O-Matic Company of Kansas City, Missouri.

Mr. Moore: Q. Now those letters that you have in your hand are the letters from the Cross Coal-O-Matic Company to The Mercoid Corporation, dated June 11, 1929; October 22, 1929; November 26, 1929; February 11, 1930; August 14, 1930; and August 20, 1930, are they not?

A. That is correct.

Mr. Moore: These letters have been presented to the Cross Coal-O-Matic Company and they have admitted that they are genuine.

Q. Did you reply to the letter dated June 11, 1929, asking you for some of your literature?

A. That was replied to by H. W. Petty, sales engineer, under date of June 13, 1929.

Q. Please read the first paragraph.

A. "We have your favor of June 11th, and are pleased to enclose for your attention copy of our new heating control catalog, together with copy of bulletin illustrating and describing our No. 848 double adjustment type controls."

Q. Now refer to the letter of August 20, 1930, and 603 please read the first paragraph.

A. "August 20, 1930."

From Cross Coal-O-Matic Company signed by Walter M. Cross, Jr.:

"We find that with the use of small domestic stokers in hot air furnaces a limit control both for top stack tempera-

ture limits ranging from say 200 to 250 degrees, as well as low temperature limit control for fire boxes of, say, in the neighborhood of 100 degrees are required. Will you please recommend and quote prices and discounts on the controls that we should use for these purposes? We will thank you for your early attention to this matter."

Q. That is enough. Now, was a reply made to that? Do you find a carbon of a reply attached to that letter?

A. There is a carbon copy of a reply of August 28, 1930, by B. W. Werb, sales engineer, addressed to Mr. Walter M. Cross, Jr.

Q. Will you please read that letter, at least the first two paragraphs?

A. The first two paragraphs—

Mr. Freeman: Mr. Moore, are you going to introduce all of these letters?

604 Mr. Moore: Now, wait a minute. The letters are already in the pleadings. They have not been introduced. I merely am going to ask him to read this reply and then introduce the copies of the letters and these two replies that he has referred to.

Mr. Freeman: Unless the court wants the substance of these letters, they are coming into the record twice by re-reading.

Mr. Moore: The replies are not coming in twice.

Mr. Freeman: You are reading them right in the record.

Mr. Moore: The court cannot take his time to read every letter that will be referred to in my brief. It will shorten the court's time and our time—

The Court: Proceed.

Mr. Moore (Continuing): —and if you will stop objecting it will shorten my time with this witness.

The Witness: A. "This will acknowledge receipt of your kind favor of August 20th and we are pleased to enclose our Bulletin A-5 where you will note illustrated and described the M-51 furnace limit control for top stack installation.

"Regarding low temperature limit control, we recommend the use of the M-53 which is a double adjustment
605 control, for both high and low operating temperatures, to meet a variety of conditions encountered in warm air furnace installations, and it will operate in such a manner that when the temperature drops to about 100 degrees in the stack, the control will cut in and start the

burner stoker. Both controls are recommended for stack installations."

Mr. Moore: Q. Where did these letters, the originals that you have in your hand, and the carbons come from?

A. The company's files under my supervision.

Mr. Moore: Photostats of the letters identified by the witness and the carbons of the replies, dated June 13, 1929, and August 28, 1930, are offered in evidence as DEFENDANT'S EXHIBIT Z.

(The exhibit was so marked.)

Mr. Moore: Q. Did one of those letters refer to a Mercoid Bulletin A-5?

A. The first paragraph.

Q. Can you produce a copy of the bulletin, Mercoid Bulletin A-5, that is referred to in that letter?

A. I can.

Q. Where did that come from?

A. From the company's files under my supervision.

Mr. Moore: A photostat of the Mercoid Bulletin
606 M-53, entitled "Bulletin A-5" is introduced in evidence as DEFENDANT'S EXHIBIT Z-1.

(The exhibit was so marked.)

Mr. Moore: Q. That bulletin is dated 6-30. Have you found any other letters in your files indicating the sale of Mercoid controls, the same as were on the market in 1925, to other coal stoker manufacturers?

A. I have.

Q. You have a letter from the Frederick Iron and Steel Company, dated September 7, 1933, in your hand, have you not?

A. That is correct.

Q. Will you please read that?

A. "We have on hand six No. 845-38 degrees to 60 degrees thermostats and we would like to know if these can be changed to 56 degrees to 80 degrees adjustment.

"Please send instruction sheet on this model, also on a furnace control Fig. 50—250 degrees to 300 degrees."

Q. Is that furnace control Fig. 50 the one that was shown in the Mercoid bulletin E-1 in 1925?

A. That is correct.

Q. Where did this letter come from?

607 A. The company files, under my supervision.

Q. Did you reply to that letter?

A. That letter I replied to in accordance with the

initials in the lower left hand corner under date of September 12th.

Q. Where did these letters come from?

A. I just told you. I just said.

Q. Where did they come from?

A. From the company's files, under my supervision.

Mr. Moore: Photostats of the letter from the Frederick Iron and Steel Company, dated September 7, 1933, addressed to Mercoid Corporation, and the carbon reply, dated September 12, 1933, are introduced in evidence as DEFENDANT'S EXHIBIT AA.

Mr. Freeman: A-A?

Mr. Moore: AA, yes.

(The exhibit was so marked.)

Mr. Moore: Q. In 1925 was the Federal Gauge Company the only company that was manufacturing controls for heating systems?

A. No, at that time we had as competitors Minneapolis Heat Regulator Company, Honeywell Heating Specialities Company, and Absolute Contactor Company.

Q. What companies were competing with the 608 Mercoid Corporation in the field of controls for heating systems in the year 1930?

A. In 1930 we had Minneapolis-Honeywell Regulator Company, Time-O-Stat Company, and I believe Penn Electric Switch Company.

Q. What was this Time-O-Stat Controls Company you referred to?

A. Well, they were a merger of the Time-O-Stat Company of Milwaukee and Absolute Contractor Company.

Q. And what is this Minneapolis-Honeywell Regulator Company you speak of?

A. A merger of Minneapolis Heat Regulator Company and Honeywell Heating Specialties Company.

Q. Is the Time-O-Stat Controls Company still a competitor of Mercoid Corporation?

A. No, they were absorbed by Minneapolis-Honeywell Regulator Company along about 1931.

Q. How many competitors did you have in this field in 1932?

A. We had Minneapolis-Honeywell and Penn Electric Switch Company.

Q. Do you know whether the Minneapolis-Honeywell Regulator Company had any correspondence with The

Mercoid Corporation in 1930 and 1931 in regard to the 609 Cross stoker patents?

A. I do.

Q. I notice you have some correspondence in your hand. Will you please indicate what the first piece of correspondence you have is?

A. Well, it is a copy of a letter dated November 28, 1930, apparently written by J. K. Luthe to H. W. Sweatt, vice president and general manager, Minneapolis-Honeywell Regulator Company, Minneapolis, Minnesota, and marked "Carbon Copy Mr. L. H. Van Ness," regarding Cross patents.

Q. It is a short letter. Please read it.

A. "Dear Harold:

"This is the first time I have been at my desk since your letter of November 21st was received.

"I have been waiting to hear from both you and Van as to your attitude as regards as license. While waiting for your suggestions, we had our patent attorneys continue their search and as a result of it, I believe that the royalty arrangement that is made with Cross, if any is made, should be on a lower royalty basis than originally suggested.

610 "I will be glad to hear from you."

Q. What is the next correspondence you find there?

A. A carbon copy of a letter dated July 3, 1931, and from the initials in the lower left hand corner apparently written by Mr. L. H. Van Ness, marked "Personal" to Mr. Harold W. Sweatt, vice president, Minneapolis-Honeywell Regulator Company, Minneapolis, Minnesota.

Q. Will you please read it? It is just one paragraph.

A. "Dear Harold:

"Mr. Thorndike, of the American Radiator Company, has told me that there are rumors in the trade that you people have made a deal in connection with the Cross stoker patents. I am sure that these rumors are unfounded, as it is my impression, without referring to our files, that we are pretty thoroughly agreed that neither one of us would take out a license on a royalty basis, under the Cross patent, without conferring with the other."

Q. Just read that last sentence.

A. "Will you please drop me a note on this, at your earliest opportunity."

Q. Now what was the next letter that you find there?

A. The next letter is a letter from Minneapolis-Honey-

well Regulator Company, addressed to L. H. Van Ness 611 of The Mercoid Corporation, 4201 Belmont Avenue, Chicago, Illinois, and in the lower left hand corner is typewritten H. W. Sweatt, and signed, "Yours very truly, Harold."

Q. Will you please read the first paragraph?

A. "Dear Van:

"I have your letter of July 3rd in reference to the so-called Cross stoker patents."

Q. I am afraid I will have to ask you to read the rest of that letter.

A. "You will recall the circumstances—Julius negotiating on these Cross patents some time last fall, at which time it was agreed that if you wanted to do anything, the three of us would get together and no one would do anything until we had conferred with each other.

"Since that time nothing further of any kind has been done and I understand that Cross has died during the interval, and we have had no communications with his estate or anyone else. The matter stands, therefore, entirely as it did at the time of our talk last fall, and if you think that it is a good time to take this up at the present time, we might get together and make some sort of an 612 effort to see what we could do with the Cross estate.

"My last recollection was that Langdon Moore was going to check into these patents and advise you as to his opinion of their value. We had them checked here at Minneapolis, and the result briefly is about as follows:

"We do not feel that the Cross claims covering the periodic starting and stopping of a burner by temperature of the combustion can cover a device located in the stack but that the claims must be limited to the combustion chamber proper. We rather believe that it is going to be difficult to antedate and show prior art on the Cross claims where he controls by the temperature of the water in the boiler."

Q. What was the next letter you found relating to this subject?

A. A letter from Minneapolis-Honeywell Regulator Company dated September 30, 1931, addressed to Mr. L. H. Van Ness, president, Mercoid Corporation, 4201 Belmont Avenue, Chicago, Illinois, regarding the Iron Fireman and Cross patents, and signed, "Julius K. Luthe," vice president, Minneapolis-Honeywell Regulator Company."

Q. Will you please read the second paragraph?

613 A. "The patent situation as regards Cross has been changed somewhat because of Iron Fireman's acquisition of the patents mentioned in their ad and because of the broader claims which have been allowed Garrison in his original patent 1,679,418, which has been reissued in the patent number 17,820."

Q. Will you please read the next two paragraphs?

A. "As you probably know, we make some stoker controls wherein the stoker fire is maintained through stack temperature, whereas Iron Fireman's controls are along the principle of an interval timer.

"I had a visit with Messrs. Cross at Kansas City last Friday and they promised to write at the end of this week as to whether they would be willing to proceed in entering into a licensing agreement with your company and our company along the lines of the verbal understanding which I had with Walter M. Cross, Senior, who died in March of this year. The terms of that understanding was a royalty of five per cent, with a minimum of 50 cents per unit."

Q. Was there any other correspondence from Minneapolis-Honeywell relating to this Cross patent?

614 A. There is a letter of November 28, 1932, from Minneapolis-Honeywell Regulator Company, addressed to Mercoid Corporation, Chicago, attention Mr. L. H. Van Ness, and signed by H. W. Sweatt, vice president and general manager.

Q. Will you please read the last paragraph on the first page?

A. "In reference to stoker circuits, you are familiar with the fact that we are the sole licensees of the Cross patents and I will not go into detail on them at this time."

Q. Where did this correspondence come from?

A. From the company's files, under my supervision.

Mr. Stone: On what issue are you offering this correspondence, Mr. Moore?

Mr. Moore: This is to show the relationship between The Mercoid Corporation and the Minneapolis-Honeywell Regulator Company in the earlier days when the Cross patent was first talked about among the control people, and it is the basis upon which the history is placed before your Honor so you can see what the relationship is, and I think I have a perfect right to trace that in presenting my case.

Mr. Stone: Now, your Honor, the plaintiff here, the
615 Mid-Continent Investment Company, has brought suit against The Mercoid Corporation. Every bit of evidence in those letters seems to me to indicate a relationship between Minneapolis-Honeywell and The Mercoid Corporation. If you will recall—

The Court: What is your complaint?

Mr. Stone: My complaint is that those issues are not what the Minneapolis-Honeywell Regulator Company did alone; that is not an issue in this case.

The Court: They are good for what they show. You say they do not affect your company at all, so I do not see any basis for your objection.

Mr. Stone: But, your Honor, the issue in the case under the counterclaim is whether the Mid-Continent and Minneapolis-Honeywell jointly did something here.

The Court: Minneapolis-Honeywell does not object to these letters, so I do not see why you should.

Mr. Stone: I object because it fills my case with a great deal of record. Does your Honor understand this situation here? The plaintiff here has licensed Minneapolis-Honeywell. If we lose this lawsuit the probability is that Minneapolis-Honeywell will cancel our license agreement. You understand the relationship is not a relationship in
616 which our interests are identical, that is, Minneapolis-Honeywell and Mid-Continent.

My point in that case is this: We licensed Minneapolis-Honeywell. It may be true, as these letters show, that Minneapolis-Honeywell and Mercoid tried to jointly take the license back there in 1930, but what has that got to do with us? The only basis that Minneapolis-Honeywell was permitted to come into this case on those two motions we had earlier in the pretrial proceedings was that the counter claim charged Mid-Continent jointly with Minneapolis-Honeywell with doing certain things they should not do, and I admitted on its face that it was good.

617 The Court: What did they charge they were doing?

Mr. Stone: They charged us with conspiracy to monopolize.

The Court: As I understand it, this is evidence offered preliminary to the evidence substantiating that charge?

Mr. Moore: Yes, your Honor.

Mr. Stone: But, your Honor, this evidence relates solely to the conduct of the Minneapolis-Honeywell Company

alone. It has nothing to do with what Mid-Continent Investment Company did.

The Court: It had to do with what your predecessor did.

Mr. Moore: The Cross Coal-O-Matic Company appears all through these letters.

Mr. Stone: All right, the Cross Coal-O-Matic Company does, but it has nothing to do with it other than to show the execution of a license agreement from Cross Coal-O-Matic. It really does not even show that we admitted that license agreement was executed.

The Court: He wants to show the circumstances under which the license agreement was executed, as I understand it. The objection is overruled. Proceed.

Mr. Moore: Photostats of the carbon copy of the 618 letter dated November 28, 1930, a carbon copy of the letter dated July 3, 1931, copy of a letter from Minneapolis-Honeywell Regulator Company, dated July 6, 1931, copy of Minneapolis-Honeywell Regulator Company letter dated September 30, 1931, and copy of Minneapolis-Honeywell Regulator Company letter dated November 28, 1931, to which the witness has just been testifying, are offered in evidence as DEFENDANT'S EXHIBIT BB.

(The exhibit was so marked.)

Q. Did you find any other correspondence from anyone else relating to this proposed license under the Cross patent in your files of about the same date as those letters that you have just referred to?

A. I did.

Q. What is that letter you have in your hand?

A. It is a letter from Detroit Lubricator Company of Detroit, Michigan, signed by Mr. C. J. Swan, and addressed to The Mercoid Corporation, Chicago, attention of Mr. L. B. Reed, vice president.

Q. Is that the same Mr. C. J. Swan who signed the letter from the American Radiator Company that was introduced in evidence earlier today?

A. It is the same C. J. Swan.

Q. What is the date of that letter?

619 A. October 7, 1932.

Q. Please read the first three paragraphs.

A. "In answer to your letter of the fourth regarding the Cross patents, the situation has become somewhat more acute recently than it has been in the past.

"I do not recall ever stating that I did not think this patent should be recognized but I have had the opinion until recently that M-H would probably use this merely as an advertising feature somewhat in the same manner as Elwood White is using the Abbott patent. I had felt that M-H probably would not actually start any suit.

"Things are different, however, at the present time. The Executors of the Cross Estate are very aggressive and are anxious to sue promptly. Mr. Huff tells me that they (M-H) are beginning suit immediately against Penn Electric Switch on the Cross patents and that they intend to prosecute this with all vigor and speed. Mr. Huff believes that it will be possible for them to completely control this situation although he is willing to grant us a license and I feel quite certain he would be willing to grant you a license. The royalties which they pay are very
620 high and the offer which they made to us was as follows:

"$1.25 royalty on each instrument of this type sold."

Q. Never mind reading the minimum guarantees. Please carry on.

A. "They have the privilege of cancellation at the end of any calendar year on sixty days notice which privilege they also extended to us. This offer carried with it the understanding that there would, necessarily, have to be an agreement on minimum selling prices in order to take care of the excessive royalty. Mr. Huff stated that this royalty was slightly more than they paid and while he would not tell the exact figure, it is my guess that he pays $1.00. This license would, of course, be non-exclusive.

"I don't like the minimums and don't believe it equitable that we should accept that responsibility. If we decide to make any overture, we shall endeavor to do it on the basis of no minimum guarantees and if anything is done, we shall try to arrange it that royalties are not payable until the final settlement of the Penn suit in favor of
621 Minneapolis-Honeywell.

"Personally, I don't see any particular harm in going ahead with this if all of us get in and keep the price right which, as I understand it, we have a legal right to do as licensees under a patent although there may be some question about this. The Minneapolis-Honeywell Company have made it rather embarrassing for us with two or three stoker companies who have wanted a patent guarantee from

us protecting them against any infringement suits or losses which we would not give them.

"I would greatly appreciate Mr. Langdon Moore's opinion on this subject. Mr. Heylmum, up to date, has not unearthed any prior art that would render this patent invalid. On the other hand, the patent No. 1,758,146 (which is the more important of the two) covers the use of a control 'in the combustion space' or 'within the furnace.' Mr. Heylmum feels that there would be a chance that a court might hold a control in the smoke pipe was not in the combustion space. We feel, however, that this might be doubtful because the resultant effect is just the same.

"Naturally, we do not want to get in any litigation 622 and if M-H are going to prosecute this matter vigorously as they claim they are, it wil probably mean trouble for all of us if the suit against Penn is successful. It seems, therefore, that if by accepting the license and paying this royalty as well as posting selling prices to include the royalty could be accomplished, it might be the best way after all. The matter is now in the hands of Mr. Helynum for recommendation and we have made no decision.

"I had planned on taking this matter up with you because it involves your Figure M-61 switch and of course, at the present selling price, neither you or we can pay this royalty.

"We are involved further in that we hope in the near future to have a furnace control which will be used with the new heat motor for damper control and of course, it can be used for stoker work. I told Mr. Van Ness about this new unit when I was in Chicago.

"Of course, Mr. Heylmum's final report may change my attitude but as of the present time, it would seem perhaps the best thing to do for both of us to tie up with M-H 623 on the best arrangement possible.

"I will advise you just as soon as I have report from Mr. Helymum."

Mr. Bair: We object, if your Honor please, to the reading of this letter into the record, and move that it be stricken on the ground that it is just reading into the record the statement of a third party whom we have no opportunity to cross-examine. It is a reading of secondary testimony, secondary evidence, and is not the best evidence. If they want to prove the things this party is al-

leged to have said, they should produce the party and not a letter written to Mercoid in this manner. It is not the best evidence of anything stated in the letter.

The Court: On what theory do you introduce it?

Mr. Moore: This is a letter—

The Court: I know what it is, but upon what theory do you introduce it?

Mr. Moore: For the purpose of showing the intent of Minneapolis-Honeywell to personally force a suit under these Cross patents, and it is threatening the distributor of The Mercoid Corporation.

Q. Mr. Swan, who signed this letter, where is he now?

A. He is now deceased.

624 Mr. Moore: He is dead. The letter was addressed to Mr. Reed. He is dead. The only reason I want to put this letter in here is to show the intent of Minneapolis-Honeywell when they first, in 1932, after they had gotten their exclusive license—

The Court: How can you show their intent by producing the testimony of some third party, upon which they have no opportunity to cross examine, and they have no way to determine whether or not the situation is as revealed in this letter which you have produced?

Mr. Moore: This letter will also show by subsequent events that Minneapolis-Honeywell did not sue Penn, but the Mid Continent Company sued on the use of a Penn switch and a system.

The Court: I imagine those things could be shown, but I do not see how you can bind the Minneapolis-Honeywell by this letter.

Mr. Moore: I am not trying to bind them. I am putting it in as part of the atmosphere.

The Court: Why do you introduce it?

Mr. Moore: As part of the atmosphere.

The Court: If you are not trying to bind them, the motion is allowed. Objection sustained.

Mr. Moore: Q. Do you know whether the Penn
625 Electric Switch Company was ever sued under this Cross patent?

A. I believe they were.

Q. Do you know positively that Penn itself was sued?

A. No, I do not.

Mr. Freeman: Mr. Moore, that has been admitted. It has already been answered.

Mr. Moore: Not that Penn was sued.

Mr. Freeman: That a Penn control was involved in a suit.

Mr. Moore: Yes, very good.

Mr. Blair: And the Penn Company defended that suit and Bair and Freeman were the attorneys in that case relating to the Penn Electric Switch Company.

Mr. Moore: Will you also admit, Mr. Freeman, that the defendant's Exhibit V of the Penn Stoker Control is the switch that was the subject matter of that suit?

Mr. Freeman: That I cannot answer. I will admit that this is a circular put out by the Penn Electric Switch Company, but as to whether or not the illustration on the circular corresponds exactly with the switch involved in the suit in Missouri, I cannot answer.

The Court: What switch was involved in the suit?

Mr. Freeman: There was a stoker switch involved. As to whether this is the stoker switch, I cannot answer
626 that. I am perfectly willing to admit that a Penn switch for the purpose of operating a stoker as a hold fire switch was involved in that suit, yes.

The Court: Does it have a number?

Mr. Freeman: Well, it has a type number on the circular.

The Court: I say, does the switch involved in the lawsuit have a number, a patent number?

Mr. Freeman: Your Honor, I never saw that switch and I do not know just what switch was involved. If they will give me a physical device of the kind that was involved in that suit, I will make a comparison and state on the record as to whether this is it or not. We did put out circulars, that is, the Penn Company put out a circular illustrating its stoker control known as type J. Model JHF is represented by Plaintiff's Exhibit 37.

Mr. Moore: All right.

Q. Did the Mercoid Corporation finally take out a licence under the Cross patent?

A. They did not.

Q. Did the Minneapolis-Honeywell Regulator Company take out a license under the Cross patent?

A. They took out an exclusive license.

Mr. Moore: That license has been introduced in
627 evidence as Plaintiffs' Exhibit 6.

The Court: Just what do you add to your case then by asking that question?

Mr. Moore: Sir?

The Court: What do you add to your case by asking that question? It is admitted, is it not?

Mr. Moore: There has been correspondence, showing that Minneapolis-Honeywell, Time-O-Stat and Mercoid were all considering taking a license under these Cross patents. I have asked him if Mercoid ever took out a license. They did not.

The Court: He said no, and you asked if the Minneapolis-Honeywell took one out, and he said yes, and it was an exclusive license. I understood that was admitted.

Mr. Moore: Yes, and as I stated, that was Plaintiffs' Exhibit 6.

Q. At the time of this correspondence in regard to the taking out of a license under this Cross patent, I believe there were conferences, as evidenced in letters to and from Mr. Van Ness and Mr. Reed and Mr. Luthe. Were you present at those conferences in connection with this?

A. I was.

Mr. Freeman: Mr. Moore, will you give us just what letters you are talking about, because we have letters 628 here running over a period of about five years, and I would like to know when some of these conferences were with respect to the issue of the patent and with respect to the license which Minneapolis-Honeywell later took?

Mr. Moore: I think I made that clear. Will you please read my last question?

(The question was read by the reporter as above recorded.)

Mr. Moore: Do you want me to specify the date of each letter?

Mr. Freeman: I would like to know what we are talking about, whether they were events occurring prior to the taking of a license.

Mr. Moore: I am talking of the events that occurred about the time that this correspondence, Mercoid's Exhibit BB, occurred, November, 1930, and the letters running through to September, 1931, and later, November, 1932. Does that fix the time?

Mr. Freeman: Yes.

Mr. Moore: Q. Can you state why The Mercoid Corporation did not join Minneapolis-Honeywell and take a license under the Cross patent at that time?

A. Well, we discussed it at great length and there

were several reasons; primarily because we consid-
629 ered the royalty involved as being very excessive, and furthermore we doubted the validity and scope of the patent itself.

Q. Now, have you any documentary evidence to prove that that was one of the reasons that you just gave?

The Court: Are you going to be considerably longer with this witness?

Mr. Moore: Your Honor, if I had been able to go along without these interruptions, I would have been through with him in an hour and a half to two hours, as I stated.

The Court: But you need a little longer time? I do not want to have you hurried. Take all the time you want. But I think this is a good time to recess.

Mr. Moore: Yes, I will take my time. I am just about a half or a third through. It depends altogether upon how many interruptions I have, how much longer it will take.

The Court: We will recess until two o'clock.

Whereupon a recess was taken to two o'clock P. M.

630 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company,
*vs.*
The Mercoid Corporation.
} Before Igoe, J.

Monday, September 15, 1941, 2:00 o'clock p. m.

Met pursuant to recess.

Present:

Messrs. Stone, Bair, Freeman and Moore.

The Court: You may proceed.

JAMES W. OWENS, a witness called on behalf of the defendant The Mercoid Corporation, having been heretofore duly sworn, resumed the stand and testified further as follows:

Q. Mr. Owens, I believe you were asked just before the adjournment if you could produce any document-
631 ary evidence corroborating the statement you made in

regard to one of the reasons why Mercoid did not take a license under the Cross patent was on account of the amount of royalty, is that correct?

A. One of the reasons.

Q. And can you now produce documentary evidence to that effect?

A. I can.

Q. What is that letter that you have in your hand, or correspondence, rather?

A. Carbon copy of a letter apparently written by Mr. L. H. Van Ness, judging by the initials in the lower left hand corner, dated September 25, 1931, to Mr. Julius K. Luthe, vice president, Minneapolis-Honeywell Regulator Company, Minneapolis, Minnesota, the subject "Iron Fireman—Recent ad in trade papers."

Q. Will you please read the second paragraph?

A. "As to the Cross patent, I am sure that Mr. Langdon Moore gave us the opinion that this would merely be a donation on our part, if we took out a license, and that the Cross patent, in view of the 'prior art,' would have no value."

Q. Now, will you please continue reading?

A. "We have heard nothing about this patent for 632 months. Do you have any details as to what patents are cited by Iron Fireman, in the advertisement in question? Have you received any opinion on the subject, from Mr. Maurice Moore?"

Q. Go on.

A. "Also, can you tell me the name of the trade paper in which this ad appeared, and its date of issue?"

Q. Now, the next paragraph.

"If, by taking out a license (at a nominal figure) under the Cross patent, we could give assurances to the trade, that would stimulate their use of controls, and at the same time have the licensor protect us in case of litigation, it would be worth while, if it would result in net profit."

Q. Where did this letter come from?

A. From the company files under my supervision.

Mr. Moore: Photostat of letter dated September 25, 1931, addressed to Mr. Julius K. Luthe, is offered in evidence as DEFENDANT'S EXHIBIT EE.

(The exhibit was so marked.)

Mr. Moore: Q. Can you produce any other documentary evidence that you attended these conferences in 1931 to which you have been just testifying?

633 A. I can.

Q. What is that you have in your hand?

A. It is a slip from a calendar pad dated Monday, December 7, 1931, with a memorandum to Mr. Van Ness, in my handwriting, and signed with my initials.

Q. What is the pencil notation on the page under the calendar?

A. "Mr. V. N.

"As Huff is away right now, suggest talking over on Friday. See L. B. R. note on letter 12 8 to Detroit."

Q. How is it signed?

A. J. W. O.

Q. In whose handwriting is that?

A. That is my handwriting.

Q. What do you find on the reverse side of that memo?

A. A note addressed to L. H. V. N. and signed L. B. R., dated December 9th.

Q. Will you please read the note?

A. "Last time we decided not to join Minneapolis in this, Langdon Moore and McCabe were at the meeting.

"Is there possible trouble if we ignore them now?"

634 Q. In hose handwriting is that note?

A. By Mr. Reed.

Q. And who is Mr. Reed?

A. He was vice president at that time and later on became president.

Q. And you are thoroughly familiar with his handwriting and signature?

A. Yes, sir.

Q. And where did you find this memorandum?

A. In the company files under my supervision.

Mr. Moore: A photostat of the memorandum on the calendar pad of Monday 7 December, 1931, with the pencil notations on both sides thereof is introduced in evidence as DEFENDANT'S EXHIBIT FF.

(The exhibit was so marked.)

Mr. Moore: Q. I call your attention to Mercoid Bulletin A-14, Defendant's Exhibit K, and direct your attention to page 7. Is there anything on page 7 describing the M-51 control which was referred to in the correspondence with Brownell?

A. There is a paragraph on the right hand side of this page 7 of this bulletin.

Q. Will you please read just that second part of the first paragraph?

635 A. "It is identically the same as the Fig. M-61 stoker control, except that it has an adjustable mounting flange and a longer sleeve, which permits the bimetal operating coil to extend further into the furnace."

Q. Did you hear anything further from the Brownell Company after Mercoid failed to take out a license from Minneapolis-Honeywell under the Cross patents?

A. We did.

Q. What is that correspondence you have in your hand?

A. The top letter is a letter from The Brownell Company, Dayton, Ohio, dated February 26, 1932, addressed to Mr. J. W. Owens, vice president, Mercoid Corporation, Chicago, and signed by Charles E. Wieland, purchasing agent.

Q. Will you please read that letter?

A. "We are just in receipt of a letter from the Minneapolis-Honeywell Regulator Company advising that they have purchased the Cross patents #1,758,146 and #1,758,147, both dated May 13, 1930.

"We presume you are entirely familiar with the coverage of both these patents regarding the use of controls especially in stacks for control of temperature, and as we are using quite a number of your controls for vari-
636 ous purposes, we desire to know if we, as purchasers, are fully protected by you from an infringement on above patents. We are using a number of your #848 pressuretrols in connection with boiler pressures, your thermostats in connection with air temperature and your M-51 as a stack control. All, of course, in connection with the operating of our stokers.

"Will you write us promptly and fully in connection with this matter."

Q. What is the next piece of correspondence you have?

A. A letter from The Brownell Company dated March 3, 1932, to The Mercoid Corporation, Chicago, and signed Charles E. Wieland, purchasing agent.

Q. Please read the letter.

A. "We are in receipt of your letter of February 29 in answer to our letter of February 26 regarding the Cross Patents now owned by the Minneapolis-Honeywell Regulator Company.

"We notice copy of your Patent Warranty and while it no doubt covers the situation, nevertheless, if the plain sheet of paper upon which it is written should become

detached from your letter in our file, it would be
637 rather difficult to locate same. We would, therefore, kindly ask you to write us again on this matter and embody this Patent Warranty in your letter.

"We would again refer to the matter of using your M-51 control in stack and will ask that you advise us if we are fully protected when using this particular control in this manner.

"We are enclosing herewith copy of letter received from Minneapolis-Honeywell Regulator Co. under date of February 23 in accordance with your request."

Q. Do you find a copy of that letter from Minneapolis-Honeywell Regulator Company attached to this correspondence?

A. There is a copy attached.

Q. Will you please read that letter?

Mr. Moore: Now, may it please your Honor, this is the notice which Minneapolis-Honeywell Regulator Company has admitted that it has sent to the trade and I would like to have the witness read the letter, so that it may be introduced in evidence.

Q. Proceed.

A. "Regarding Cross patents."

It is marked "Copy."

638 "Re 'Cross' Patents.

"A very unsatisfactory situation has been brought about in the stoker industry through the growing need of a satisfactory system of preventing the extinguishment of the stoker fire and the fact that the best of such systems were covered by Cross patents No's. 1,758,146 and 1,758,147, both dated May 13, 1930.

"Because the uncertainty and risk involved the entire industry, we undertook to negotiate with the owners of the above patents and we are happy to inform you that we have obtained from them an exclusive license under each of the above named patents.

"These patents do not cover individual controls as such, but rather, the system or method of preventing the extinguishment of the fire when operating under low heat requirements by means of a system of control which is responsive to either the temperature of the combustion gases or the temperature of the water in the boiler.

"Because these patents cover a system involving the controls and the stoker and not the controls alone, we

have worked out a special plan whereby a license
639 under these patents can be granted by us to the purchaser. Each of the special stoker controls, namely the 'Stokerswitch' and 'Holdfire Control', will carry on its nameplate the folloing legend.

"'This Stokerswitch and or Holdfire Control carries with it a license to use the system of preventing extinguishment of the fire when operating under low heat requirement conditions as covered by patent No. 1,758,146 and or 1,758,147.'"

"This will be notice to the purchaser that, through the inclusion of one of these units, the entire stoker installation is licensed under one of the above named patents. We will be glad to give you any further information in regard hereto which you may wish."

Q. Now, did you find a patent guarantee attached to that correspondence, as requested?

A. There is a carbon copy of a letter, apparently dictated by Mr. B. Reed, dated March 15, 1932, addressed to The Brownell Company, Dayton, Ohio.

Q. Without taking the time of the court to read that letter, is that the usual guarantee and does a guarantee similar to that appear in your literature today?

640 A. That covers our patent warranty pretty well.

Q. What is the next piece of correspondence you have there?

A. A letter from The Brownell Company, Dayton, Ohio, dated October 7, 1932, to The Mercoid Corporation, Chicago, signed by Mr. Charles E. Wieland, purchasing agent.

Q. Will you please read that letter?

A. "We are in receipt of letter from the Mid-Continent Investment Co., Kansas City, Mo., copy attached which is self-explanatory.

"Sometime ago we had up with you the matter of your protection to us when referring to infringement on controls such as you manufacture. We are not quite sure whether the enclosed referred to the Cross patents or some other patents and we would be pleased to have report from you as to whether we are protected in this particular instance as it so happens we use your M-51 control in stack control work on stoker installations."

Q. And was there a copy of that letter attached thereto?

A. There is a copy of a letter dated September 28,

1932, Kansas City, Missouri, from the Mid-Continent Investment Company, Forbes Cross.

641 Q. Did you attempt to obtain the original of that letter from the Brownell people?

A. I believe we have the original.

Mr. Moore: May it please your Honor, this is a photostat of the original letter from the Brownell Company just referred to and hich has been admitted by the Mid-Continent Investment Company as being genuine.

Q. Will you please read the copy which you have in your hand?

Mr. Freeman: Mr. Moore, do I understand you to say that this large chart is a photostat of a letter?

Mr. Moore: A photostat of the letter in which certain words are emphasized by being put in little heavier type, that is all.

Mr. Freeman: I am going to ask you whether or not in making the photostat you underscored or put in heavy type certain portions, which does not appear in the original letter?

Mr. Moore: Oh, yes, I did.

Mr. Freeman: And that was for the purposes of emphasis?

Mr. Moore: That was for the purposes of emphasis.

Mr. Freeman: Then what you have here produced is not a photostat of the original letter, but one that is modified?

642 Mr. Moore: I have the original letter here and the original letter is being introduced in evidence, a photostat of that as it appears here. Not these charts. These charts are for the purpose of explanation only.

Mr. Freeman: And those charts are not photostats?

Mr. Moore: Yes, they are photostats.

Mr. Freeman: With your emphasis placed thereon?

Mr. Moore: After they have been photostated—

The Court: Anyhow, they are not going in evidence.

Mr. Moore: They are not going in evidence, no, your Honor.

Q. Please read that, Mr. Owens.

A. "Your attention is called by this letter to Patents No. 1,758,146 and 1,758,147 owned by this company. The first of these patents covers a dual control in stoker operation providing for automatically regulating the fuel feeding means and, at the same time, automatically maintaining the fuel bed to prevent extinguishment of the fire.

"Any method of using automatic control instruments for preventing extinguishment of fire, if such control is 'actuated by a pre-determined minimum temperature for said combustion space for preventing extinguishment of the
643 fire when operating under low heat requirement conditions,' would come within the scope of this patent.

"The sale of a stoker together with such an instrument or the sale of the instrument alone for use in the dual control of the stoker operation constitutes infringement of these patents. We therefore suggest that in the purchase of your control instruments you ascertain if you are also purchasing rights under the above named patents, so that you will be fully protected in this matter."

Q. Where did this correspondence come from?

A. The company's files, under my supervision.

Mr. Moore: Photostats of the Brownell letter dated February 26, 1932, the Brownell letter dated March 3, 1932, the copy of the "Re: Cross Patents" attached thereto, photostat of the carbon of the letter dated March 15, 1932, attached thereto; the Brownell letter of October 7, 1932, with a copy of the letter attached thereto and the original Mid-Continent Investment Company of September 26, 1932, addressed to The Brownell Company are offered in evidence as DEFENDANT'S EXHIBIT GG.

Mr. Freeman: We object to the introduction of the second letter of the group, your Honor.

The Court: Which one is that?

644 Mr. Freeman: The one dated March 3rd; until we have an opportunity to see the letter dated February 29th from The Mercoid Corporation to The Brownell Company. I would like to see that letter before we say these letters may go in.

Mr. Moore: Now, your Honor, it may take some time to dig that up. The only part of this letter I am relying on at all and am introducing is the next to the last paragraph, wherein The Brownell Company stated:

"We would again refer to the matter of using your M-51 control in stack and will ask that you advise us if we are fully protected when using this particular control in this manner."

The Court: It may go in, subject to his right to look at the other letter. If that is not produced, you will bring it to my attention.

Mr. Moore: You want the copy?

Mr. Freeman: I would like all the correspondence, yes.

Mr. Moore: It will take some time to dig that up and perhaps take a truck to bring it in here.

Mr. Freeman: No, I want just the one letter, Mr. Moore.

The Court: Just one letter. That should not take
645 very much time.

Mr. Moore: All right.

Mr. Freeman: Now, these photostats you are introducing are photostats of the letters?

Mr. Moore: Oh, yes.

Mr. Freeman: Without modifications?

Mr. Moore: Without modifications.

(The exhibit was so marked.)

Mr. Moore: Q. Did you hear from any other stoker manufacturer in regard to these Cross patents along in 1932?

A. Yes, sir, we did.

Q. What is that letter that you have in your hand?

A. It is a letter from the Will-Burt Company, Orville, Ohio, dated February 29, 1932, subject "Cross Patents," to the attention of Mr. L. H. Van Ness, president, to The Mercoid Corporation, Chicago, signed by B. G. Cope.

Q. Will you please read that letter?

A. "We are enclosing you copy of letter received under date of February 25th from the Minneapolis-Honeywell Regulator Company.

"According to this letter, they seem to feel that they control the situation covering the low temperature stack control.

646 "We wish you would give us some further information regarding it and your recommendations to us as to whether you think we ought to buy the stack controls from the Minneapolis-Honeywell people for the time being, or do you feel that these patents can be proven invalid as suggested in your letter of June 4, 1931.

"We will appreciate anything that you have to offer on the subject."

Q. Was there a copy of the Minneapolis-Honeywell Regulator Company's letter attached to that letter?

A. There is.

Q. Have you compared that with the copy of the Minneapolis-Honeywell Regulator Company letter furnished you by the Brownell Company?

A. Yes. It is identical as to dates.

Q. And have you read the two? Are they the same or will you have to read that into the record?

A. It is the same thing exactly.

Mr. Moore: Any objection to it?

Mr. Freeman: No objection to the letter, except we want the letter of June 4, 1931, produced that is referred to in that letter.

Mr. Moore: All right, we will make a note of it.

647 The Court: Do that.

Mr. Moore: Q. Where does the letter come from?

A. From the company files, under my supervision.

Mr. Moore: Photostat of the Will-Burt Company letter of February 29, 1932, with the attached copy of Minneapolis-Honeywell letter is offered in evidence as DEFENDANT'S EXHIBIT HH.

(The exhibit was so marked.)

Mr. Moore: Q. Did you get letters from other control manufacturers in regard to the same subject, about the same time? That is, the Cross patent.

A. Many letters.

Q. What is that letter you have in your hand?

A. Letter from the Combustioneer, Incorporated, Springfield, Ohio, addressed to The Mercoid Corporation, Chicago, attention Mr. H. A. Matthews, sales engineer, signed by J. H. Walter, chief engineer.

Q. Will you please read the first paragraph on page 2?

A. "A few months ago we received a communication from the Minneapolis-Honeywell Company informing us of their patent rights covering the hold fire controls. These you no doubt know were certain claims as established by the Cross patents. Their letter to us was simply in-

648 forming us of these patent rights, and cautioning us against the use of controls that might infringe. Following that, we have asked protection from infringement suits wherever we are purchasing equipment, and I am sure that you will agree with us that this is highly proper and necessary. To that end, please find attached a form of guarantee against such suits or liability on our part. We would be very pleased to have you include such a guarantee either on the form which we are sending you or a form of your own, equivalent in nature for our protection."

Q. Where did that letter come from?

A. From the company files, under my supervision.

Mr. Moore: A photostat of the Combustioneer letter of June 14, 1932, is offered in evidence as DEFENDANT'S EXHIBIT II.

Mr. Freeman: Objection is made to the introduction of

this letter unless the defendant will produce the remaining portion of the letter or the enclosures that came along with the letter. This is only a portion of what was sent to The Mercoid Corporation by the Combustioneer, Inc. and we are entitled to the rest of the letter before it is introduced.

649 The reference is made: "To that end, please find attached a form of guarantee against such suits or liability on our part. We would be very pleased to have you include such a guarantee either on the form which we are sending you or a form of your own, equivalent in nature for our protection."

Mr. Moore: I will endeavor to produce that.

The Court: Very well.

Mr. Moore: I can produce any of them.

Mr. Freeman: This was attached to the original letter, Mr. Moore?

Mr. Moore: No, it was not. There was no enclosure or anything attached to the letter.

(The exhibit was so marked.)

650 Mr. Moore: Q. What is that letter you have in your hand there?

A. A letter from The Bardes Stoker Works, Cincinnati, Ohio, dated October 7, 1932, addressed to The Mercoid Corporation, Chicago, signed Oliver L. Bardes, vice president.

Q. Will you please read that letter?

A. "We have received a letter from Mid-Continent Investment Company calling our attention to patents 1,758,146 and 1,758,147. We have received from Minneapolis-Honeywell Regulator Company and Penn Electric Switch Company the early part of this year, letters stating we were protected.

"Have you any word for us along this line and must we buy from Minneapolis-Honeywell or Penn Electric Switch Company, rather than you?"

Q. Where did this letter come from?

A. From the company files, under my supervision.

Mr. Moore: A photostatic copy of The Bardes Stoker Works letter of October 7, 1932, is offered in evidence as DEFENDANT'S EXHIBIT JJ.

(The exhibit was so marked.)

Mr. Moore: Q. What is that letter you have in your hand?

A. A letter from the Paragon Kol-Master Corpo-

651 ration, Oregon, Illinois, dated October 12, 1933, to The Mercoid Corporation, Chicago, attention of Mr. Owens, signed Joseph F. Reed, president.

Q. Will you please read that?

A. "Will you advise us whether we will have your protection against any patent infringements in the use of your stack control?

"We have been advised that users of controls coming under the Cross patent are to be sued for infringement.

"Before we can purchase further stack controls from your Company, we would like to have your advice on this subject."

Q. Where did that letter come from?

A. From the company files, under my supervision.

Mr. Moore: A photostat of the Paragon Kol-Master letter, dated October 12, 1933, is offered in evidence as DEFENDANT'S EXHIBIT KK.

(The exhibit was so marked.)

Mr. Moore: Q. Did you hear further from the Mid-Continent Investment Company, or did you hear anything from the Mid-Continent Investment Company in regard to these Cross patents?

A. We did.

652 Q. What is that letter that you have in your hand?

A. This is a letter from the Mid-Continent Investment Comapny, Kansas City, Missouri, dated November 21, 1932, addressed to The Mercoid Corporation, Chicago, attention Mr. Louis B. Reed, vice president, and signed by Forbes Cross.

Mr. Moore: This, your Honor, is one of the letters that was presented to Mid-Continent Investment Company and they admitted it was genuine. You will find it in the book of letters you have there.

Q. Will you please read that letter?

A. "Please pardon our belated reply to your letter of November 8th.

"Regarding the infringement notices to the Brownell Company of Dayton, Ohio, and to the Will-Burt Company of Orville, Ohio, we wish to advise that the sale or use of any automatic stoker control that is actuated by the predetermined temperature of the combustion space for preventing extinguishment of fires in operating low heat requirement conditions no matter where the control is placed,

is an infringement of United States patents 1,758,146 and 1,758,147.

"We have obtained a copy of your circular showing 653 automatic controls for stokers and forced draft feed coal equipment. On page 7 of this bulletin appears your type N-16 stoker control, the sale of which infringes the two above patents.

"We trust that you will immediately take all necessary steps to obtain protection under these patents, in order that you and your customers may be relieved of any liability in this matter."

Q. Where did that letter come from?

A. From the company files, under my supervision.

Mr. Moore: A photostatic copy of the Mid-Continent Investment Company letter of November 21, 1932, is introduced in evidence as DEFENDANT'S EXHIBIT LL.

(The exhibit was so marked.)

Mr. Moore: Q. Did you receive at a later date any letters from any other coal stoker manufacturers in regard to the Cross patents?

A. We did.

Q. What is that letter you have in your hand?

A. A letter from Fairbanks, Morse & Company, Chicago, dated June 5, 1934, addressed to Mercoid Corporation, Chicago, attention Mr. J. W. Owens, and signed by R. M. Guthrie, chief engineer, stoker division.

Q. Will you please read it?

654 A. "Attached is a copy of a letter recently received from the Mid-Continent Investment Company. It is self-explanatory. We wish to have a commitment from your company regarding this matter, together with satisfactory evidence of protection against any possible action or annoyance from possible patent litigation."

Q. Was there a letter attached to that?

A. Yes, sir.

Mr. Moore: May it please your Honor, a copy of this letter has also been admitted by the plaintiff, Mid-Continent Investment Company, as being a letter sent by them over the signature of Mr. Walter M. Cross, Jr.

Q. Will you please read it?

A. "It has recently been called to our attention that you are purchasing controls for the purpose of maintaining pre-determined minimum fire-box temperature in con-

nection with stoker fired furnaces from a Company not licensed by us to sell controls for this purpose.

"We wish to make this a formal notification to you that we consider the sale and use of controls for this purpose an infringement of Cross patent, number 1758146.

655 "Very truly yours,

"Mid-Continent Investment Co.,

"By: Walter M. Cross, Jr."

Q. Where did that letter come from?

A. From the company files, under my supervision.

Mr. Moore: A photostat of the Fairbanks, Morse & Company letter, dated June 5, 1934, is offered in evidence as DEFENDANT'S EXHIBIT MM.

(The exhibit was so marked.)

Mr. Moore: Q. Did you hear anything further from the Brownell Company in regard to the use of the M-51?

A. We have a letter from the Brownell Company, Dayton, Ohio, dated December 18, 1934, addressed to The Mercoid Corporation, signed by Charles E. Wieland, purchasing agent.

Q. Will you please read the second paragraph?

A. "If your Mr. Owens will recall we have been using for several years your M-51 as a stack control. If your M-61 has any advantages over M-51, we would be pleased to know about it."

Q. Was there a carbon attached to that letter giving a reply?

A. There is a carbon attached which is a copy of a letter I dictated under date of December 21, 1934, to the
656 Brownell Company, Dayton, Ohio, attention of Mr. Charles E. Wieland, purchasing agent.

Q. Will you please read that reply?

A. The full letter?

Q. No. Omitting the first paragraph.

A. "With reference to the second paragraph of your letter, would advise that the writer was given to understand that you were using the M-51 as a Stoker Switch, and inasmuch as there was a slight saving to you in the purchase price of this control over the M-61, the matter was not gone into very thoroughly at the time of our discussion.

"However, the difference between the two controls is that the M-61 is built with a different size sleeve more suit-

able for stack mounting. Furthermore, the design of the M-61 permits of the use of the stainless steel well, which, of course, is essential for protection of the bi-metal element. Please see bulletin No. 240 enclosed herewith."

Q. Where did this letter come from?

A. From the company files under my supervision.

Mr. Moore: A photostat of The Brownell Company letter dated December 18, 1934, and the carbon copy attached thereto, dated December 21, 1934, to which the witness
657 has testified, is offered in evidence as DEFENDANT'S EXHIBIT NN.

Mr. Stone: Your Honor, Mid-Continent Investment Company wishes to enter an objection against the use of any of those letters to prove a defense of misuse of this patent, on the ground that all of these transactions occurred prior to the filing date of the suit in Kansas City, and this is a defense that could have been raised in that suit.

Mr. Moore: I do not see that they could have been possibly raised. The Mercoid Corporation was not being sued in that suit.

Mr. Stone: I have made the objection, and if your Honor would like me to enlarge on it, this is what we have to say about it.

In the suit down in Kansas City the defendant raised the objections of invalidity and non-infringement. I believe that is all. A defense of laches could have been raised. A defense of misuse of the patent could have been raised.

The holding in one of our neighboring circuits on exactly this point, namely, the holding in Warford *vs.* Bryan Screw Machine Company, was to this effect: This is what the defendant did in this new case. This was an
658 analogous case; in a patent suit, where the plaintiff had originally sued on a patent a direct infringer, and the direct infringer had been protected by the manufacturer.

The Court: Was it a system patent?

Mr. Stone: Well, it was a combination patent, yes.

The Court: What?

Mr. Stone: It was a combination claim.

The Court: Of course, your lawsuit in Kansas City was against an individual for use of your system.

Mr. Stone: It was on a combination claim.

The Court: Their contention, as I understand it, for

this lawsuit, is that they were making something that might be used as a part of your system, but it was not made for use in your system.' I don't think that issue was tried out in Kansas City.

Mr. Moore: No, sir, it was not.

Mr. Stone: That is right. That is the contributory infringement issue and we are trying that here.

But here is the point I am making, your Honor. In the case down at Kansas City, this defendant could have raised certain issues in the trial of that suit, and one of those issues was the issue of laches, and I am giving you this case of Warford *vs.* Bryan Screw Machine Company 659 where the plaintiff first said the infringer in the lawsuit were the manufacturers—that is, this infringer had purchased something from the manufacturer and put it in the installation, which was an infringement just as down in the Carthage case.

The Court: Were they defending a system patent there?

Mr. Stone: Yes. The same proposition. We call them combination claim patents. It was a sort of a combination of elements to make up a patent.

Mr. Moore: What was the accused device?

Mr. Stone: If you wait just a second I will get that for you. I mean, it is that proposition that I have.

Mr. Moore: And what was the title of the patent in suit in that case? That will clear it up, your Honor, as to whether it is a system patent or not.

Mr. Stone: I will have to get the actual case on this. I don't have it here. It is 44 Fed. 2d.

The Court: The record will show your objection. The objection will be overruled.

Mr. Moore: Q. Mr. Owens, you have produced correspondence with The Brownell Company, manufacturers of underfeed stokers, relating to notice of infringement received from the Mid-Continent Investment Company, and a letter received from Minneapolis-Honeywell Regulator 660 Company. What, if any, was the effect upon The Brownell Company of those letters from Minneapolis-Honeywell Regulator Company and Mid-Continent Investment Company, that is, in regard to purchase of your controls from The Mercoid Corporation?

A. The Brownell Company?

Q. Yes.

A. Well, they continued to purchase our controls.

Q. A little louder.

A. They continued to purchase our controls.

Q. And are they still continuing to purchase them?

A. They are.

Q. I also understand that you have referred to and produced letters from the Will-Burt Company in regard to letters they received from Minneapolis-Honeywell, I believe. Did you handle that account, the Will-Burt account?

A. I did.

Q. What was the effect of those letters they received?

A. When they received the letters back in February, 1932, they did stop buying our controls, and later that year I had occasion to go over there. I had known the officers of the company for a good many years. I had done business with them when I had had a previous connec-
661 tion. It took a lot of hard fighting, promising, and it was about as tough a battle as I ever had to get an order, to get them back in line, to continue to use Mercoid controls.

Q. Now, you have produced letters from the Combustioneer, Bardes, Paragon Kol-Master and Fairbanks, Morse, regarding the letters they had received from Mid-Continent and Minneapolis-Honeywell. Now, did you receive any other requests for information in regard to this Mid-Continent-Minneapolis-Honeywell-Cross patent matter?

A. Oh, we had numerous requests. In my discussions with the sales engineers, they were getting requests, and every time I called on a stoker account it was the same thing.

Q. How many stoker accounts do you suppose you called on during the following six months or a year after the Minneapolis-Honeywell sent out this notice in February of 1932?

A. Oh, I probably called on dozens of stoker manufacturers.

Q. Can you be a little more definite?

A. Dozens or—

Mr. Freeman: He has answered the question. He said about a dozen.

662 Mr. Moore: About a dozen?

The Witness: I said dozens. I probably called on twenty or thirty.

Mr. Moore: Q. What was your reaction to what the stoker control manufacturers raised with you?

Mr. Bair: That is objected to as immaterial, also as not clear as to what he is talking about. What reaction to what?

The Court: Reaction as to him.

Mr. Moore: What effect these letters were upon the coal stoker manufacturers?

The Court: How is that material?

Mr. Moore: Because he is a vice-president of the company. He goes all over the country and it is a question as to whether these letters had any effect upon the coal stoker manufacturers. Now he has been interviewing them. He said he has had a lot of personal interviews.

The Court: That was not your question. Your question, was, what was his reaction.

Mr. Moore: Q. Well, what was the reaction of the coal stoker manufacturers or customers or prospective customers that you called upon, to the receipt of these letters?

663 A. It was considerably—

Mr. Bair: That is objected to as being too general, unless he names some particular company.

The Court: If you name some company, I think you can ask that kind of a question.

Mr. Moore: Q. Can you name one coal stoker manufacturer that you called upon who did not write into the company on the question of Minneapolis-Honeywell's notice of February 25 and the Mid-Continent's letter of September 28, 1932?

A. Yes, I probably could name quite a few.

The Court: You were not asked that? You are asked to name one.

The Witness: At the moment, no.

The Court: All right.

Mr. Moore: If he remembers later, may I ask him that question then?

The Court: Yes.

Mr. Moore: Q. What was the condition of the domestic automatic stoker business in 1930?

A. Well, it was, I would say, coming along, about getting a start.

Q. It was merely starting in 1930?

A. Well, we had been doing some business with a
664 few companies, such as we mentioned here today, but it had not reached anything like the proportions it did during the depression years.

Q. What do you mean by that? Did the business throughout the country increase after 1930?

A. Yes, it did.

Q. And to what extent did it increase?

A. Well, there are charts made up by the Bureau or Chamber of Commerce that show that growth in the stoker industry. That probably would answer the question better than I could do it.

Q. Can you produce a chart prepared from the report of the United States Department of Commerce showing the sales of domestic coal stokers from the years 1931 to 1940?

A. Yes, we can.

Mr. Freeman: That is a regular publication, is it not, by the Bureau of Standards?

Mr. Moore: Let me have that back a minute. There is a series here of the reports.

Mr. Freeman: If it is a Bureau of Standards publication, there is no objection to it. Or was this one made up especially for this trial?

Mr. Moore: I asked him if he could produce a
665 chart prepared from the records stated in these bulletins, and he said he could. I have not asked him to produce it yet.

The Court: The question is, the bulletins you are talking about, are those regularly issued by the Department of Commerce?

Mr. Moore: Yes, your Honor, and I am asking these be introduced in evidence.

The Court: That is all he asked you.

Mr. Moore: Yes.

The Court: That is the answer, then.

Mr. Moore: Yes.

Q. And can you produce a chart prepared from the records of The Mercoid Corporation showing the sales of fire maintenance controls in the domestic automatic stoker art for the years 1931 to 1940?

A. We can.

Q. Did the sales of The Mercoid Corporation of controls for maintaining fire in automatic stokers increase in

proportion to the number of domestic automatic coal stokers sold during those years?

A. Emphatically no.

Q. There is an enlargement of that chart. Will you hold it up before the court, where the court can see it?

666 Perhaps you better come around in front here.

The Court: I can see it from there all right.

Mr. Moore: Can you see it there satisfactorily, your Honor?

The Court: Yes.

Mr. Moore: Q. What is the line shown there in red?

A. The total sales of stokers using fire maintaining controls.

Q. And what is the line shown in blue?

A. The total sales of fire maintaining controls of all types, sold by Mercoid.

Q. What were the total sales in the year 1931 of all stokers, as shown by the red line?

A. Eight thousand four hundred and thirty-five.

Q. And what was the number of total sales of the Mercoid Corporation of stoker maintaining devices during the year 1931?

A. Five hundred and ninety-five.

Q. For the year 1932 what were the total sales?

A. Stoker sales were 7,699.

Q. And the Mercoid?

A. One thousand and three.

Q. In the year 1933, the total sales?

A. Fifteen thousand four hundred eighteen stokers.

667 Q. And the Mercoid?

A. One thousand seven hundred twenty-one Mercoid controls.

Q. In 1935?

A. In 1935 there were forty-four thousand two hundred and eighty-eight stokers and two thousand, five hundred and seventy-three Mercoid controls.

Q. In 1938?

A. In 1938 there were 89,690 stokers.

Q. And Mercoid?

A. Six thousand one hundred and sixty-nine Mercoid controls.

Q. And the year 1940?

A. There were 143,838 stokers and 7,345 Mercoid controls.

Q. You stated that this chart was made from the records of the Department of Commerce, did you not?

A. That is correct.

Q. And are they attached to the chart that you have here?

A. Yes, these are the same charts.

Q. And upon what authority did you base the figures for the Mercoid sales?

A. Well, those figures were given me by our comptroller, Mr. James F. Chambliss.

668 Q. Did you ask for those figures?

A. I did.

Q. And they were prepared under your direction from the books of the company, is that correct?

A. That is correct, yes, sir.

Mr. Moore: The chart showing total sales of stokers and total sales of fire maintaining controls of the Mercoid, of the Department of Commerce, Bureau of The Census, bulletins headed Mechanical Stokers, December, 1932; Mechanical Stokers, December, 1933; Mechanical Stokers, December, 1935; Mechanical Stokers, December, 1936; Mechanical Stokers, December, 1937; Mechanical Stokers, December, 1938; Mechanical Stokers, December, 1939; and Mechanical Stokers, December, 1940, attached to this chart, and an affidavit of James F. Chambliss, the auditor, assistant secretary and assistant treasurer of The Mercoid Corporation, as to the amount of sales of Mercoid fire maintaining controls during the years 1931 to 1940, inclusive, taken from the records of The Mercoid Corporation, are introduced in evidence as DEFENDANT'S EXHIBIT OO.

Mr. Freeman: We are objecting to the introduction of an affidavit made by somebody else who compiled these figures. This witness cannot testify as to what some-

669 body else did.

Mr. Moore: The witness has stated that he is the vice president of the company and that he directed Mr. Chambliss, who makes this affidavit, to prepare the report on the sales of fire maintenance controls of the corporation during those years, and he has done so. Now, if you care to cross-examine Mr. Chambliss, we will have Mr. Chambliss brought down.

Mr. Freeman: Let this witness, if he wants to, state that these figures were from the books of his company, and subject himself to cross-examination, instead of introducing an affidavit.

Mr. Moore: He has already stated that.

The Court: If you want to cross-examine Mr. Chambliss, I presume he will have to be produced.

Mr. Moore: There will be no objection to that, your Honor.

The Court: You can determine that after you cross-examine this gentleman.

Mr. Moore: Q. You have heard a lot here, Mr. Owens, as you have been in court during this trial, about this Kansas City suit. Do you have any personal knowledge of anything in relation to that suit?

The Witness: Will you repeat that, please, Mr.
670 Reporter?

(Mr. Moore's question was read as above recorded.)

The Witness: A. I do not know what you mean by "personal knowledge." I know of the suit, yes.

Mr. Moore: All right.

Q. Do you know whether or not The Mercoid Corporation makes a practice of installing the Mercoid instruments that it sells?

A. No, we never have.

Q. Do you know whether anybody in The Mercoid Corporation has ever installed any of the instruments purchased from The Mercoid Corporation?

A. Not that I know of.

Q. To whom does The Mercoid Corporation sell its instruments?

A. To manufacturers, jobbers, distributors, dealers, and the large industrial users who employ their own maintenance departments.

Q. Did the Federal Gauge Company, to your knowledge, ever install the Mercoid instruments it sold?

A. No, we did not.

Q. When you were vice president in charge of the sales of the Federal Gauge Company, did you know
671 definitely when you sold a Mercoid control, how the user was going to employ it?

A. No, except that we have an idea, from the type of control sold, but we furnish them wiring diagrams and so on, and it would give us some idea. We could only hope they would put it in in accordance with our directions and instructions.

Q. Now, that was during Federal Gauge days. Did that apply as well to The Mercoid Corporation?

A. Oh, yes.

Q. The Mercoid Corporation and the Federal Gauge put out wiring diagrams and literature suggesting how the controls could be used?

A. That is correct, they did.

Q. And did you ever check to find out whether they were used in that manner?

A. Well, once in a while, when they get in trouble we go out and find out they didn't have it wired in right, and we would show them the wiring diagram and suggest they make a change.

Q. I believe you have spoken of sales engineers. Mr. Schultz testified that he was a sales engineer first. How many sales engineers did The Mercoid Corporation or Federal Gauge employ in 1925, do you know?

672 A. Well, we had three down at New York and one or two at Chicago.

Q. And they would cover the entire United States, did they?

A. That is correct.

Q. Now, in the year 1932, about how many did you have?

A. Probably twelve or fourteen, altogether.

Q. And in the year 1940, how many did you employ?

A. About the same number.

Q. What were the duties of these sales engineers?

A. They were to contact the various classifications of trade, such as manufacturers, jobbers, dealers, primarily with the idea of securing contracts and business.

Q. They were a combination of salesman and engineer, is that correct?

A. Well, they are engineers to the extent that if they call upon a customer, especially a manufacturer who wanted some help and suggestions as to the controls for his heating, whether it is an oil burner or stoker, they are prepared to give him such aid and assistance.

Q. Were they prepared to install Mercoid controls on the premises of the users?

A. No; that was not part of their job at all. They had nothing to do with installations at any time.

673 Q. Did they ever assist the distributors in instructing the distributors, installers, or service men, how to install Mercoid controls?

A. The distributors, as a rule, do not put in burners or stokers. That is done by the dealer. While our men might call upon dealers occasionally, it is more with an

idea of giving them an outline of the proper functioning of the control, and not to install it.

Mr. Moore: Direct examination closed.

The Court: We will take a recess for ten minutes.

(A short recess was here had, after which the proceedings were resumed as follows:)

Mr. Moore: May it please your Honor, the witness was asked to name some of the manufacturers that he had talked to about certain matters, and at that time it was objected to because he could not name anyone specifically, and your Honor gave me the right, in the event that he could remember, to ask him that question. Now he tells me that he has recalled the names of some, and I would like to put that on the record, before the cross-examination.

The Court: All right.

Mr. Moore: Q. The question was, will you name some—

Mr. Freeman: The question was to name one company.

Mr. Moore: Q. Will you name one company that 674 talked to you or you talked to in regard to the Cross patent and the letters that were sent out by the Minneapolis-Honeywell and Mid-Continent?

A. I talked to Mr. Bohlke of the Auburn Stoker Company.

Mr. Freeman: At Muncie, Indiana?

The Witness: Auburn, Indiana.

Mr. Freeman: Muncie, Indiana?

The Witness: No, Auburn, Indiana.

Mr. Moore: Q. You were then asked, what was his reaction.

A. Well, the reaction of the trade, not only of Mr. Bohlke, but the trade in general—

The Court: No, what was his reaction?

The Witness: A. Well, he was considerably confused and he did not know just what to do about it all, and the net result was that it forced him to other types of fire maintenance. We, in turn, lost the business.

The Court: Cross-examine.

*Cross-Examination by Mr. Freeman.*

Q. What do you mean by fire maintaining controls as referred to in your chart, Defendant's Exhibit OO?

A. Any type of control that is designed to start and stop a stoker at certain intervals to prevent the fire
675 from going out.

Q. And in the bulletins published by the Bureau of Commerce, do you find in class 1 and 2, any reference to fire maintaining controls?

A. I do not recall any.

Q. Will you look at the bulletin, forming a portion of Defendant's Exhibit OO, and tell us whether you find any reference therein to fire maintaining controls forming a part of class 1 and 2?

A. Well, there is nothing here about fire maintenance or maintaining.

Q. So that when the chart was made, referring to total sales of stokers using fire maintaining controls, and reference was made then to the total number as found in class 1 and 2, actually class 1 and 2 is not limited to any particular type of control, in so far as fire maintaining controls are concerned, is that correct?

A. I believe you are right, Mr. Freeman.

Q. So that the use of the term "fire maintaining controls" is incorrect in the charts?

A. Yes, you are right.

Q. Now, the Mercoid sales, as shown on the same chart, Defendant's Exhibit OO, I take it, includes all types of fire maintaining controls?

676 A. You are right again.

Q. Do you understand the term "fire maintaining control" to mean the ordinary room thermostat which starts and stops the stoker?

A. I do not.

Q. Do you understand the term "fire maintaining control" to mean either a hold fire control of the temperature operated type, or the timer operated type?

A. Both types.

Q. So that the comparison made by The Mercoid Corporation on Defendant's Exhibit OO with respect to its sales and those reported by the Department of Commerce is not a proper comparison?

A. I cannot admit that.

Q. The sale by Mercoid was of what kind of controls?
A. Fire maintaining controls.
Q. The two kinds or one kinds?
A. Both kinds.
Q. And the sale of controls as reported by the Department of Commerce—
A. The sale of controls?
Q. What was that?
A. The sale of controls as reported by the Department of Commerce?
677 Q. No, stokers.
A. Oh!
Q. The sale of controls as reported by the Department of Commerce included stokers without any controls on whatsoever, isn't that right?
A. I have got your question mixed up.
The Court: You mean stokers. You asked him about the sale of controls.
Mr. Freeman: I am asking about the sale of stokers.
A. You kept on saying controls.
Q. I am asking you about the sale of stokers.
A. Your question would be in order if we did not all happen to know that No. 1 and 2 class would ordinarily take a fire maintaining control. They don't all take them, but the majority do, to the extent that that chart would not be 10 percent out of line.
Q. Nothing is stated in the report, however, about fire maintaining controls?
A. They do not concern themselves with that. We would have to go to other authorities to get that information.
Q. What was your proportion of sales of stoker controls, as reported on your chart, Defendant's Exhibit OO, with respect to the sale of stokers of the class 1 and 2 in the year 1931?
678 A. Percentage?
Q. Yes, give us the approximate percentage.
A. Well, 595 against 8,400 would be 1/14 or approximately 7¼ percent, or 7 percent.
Q. And what was the percentage of the sale of your controls with respect to the sale of stokers as found on Defendant's Exhibit OO for the year, say, 1937?
A. 1937?
Q. Yes.

A. We have got a little over seven thousand—may I have that glass, please, Mr. Moore?

Mr. Moore: Yes. (Handing witness reading glass.)

The Witness: A. Seven thousand three hundred and seventy-four against ninety-three thousand five hundred and nineteen, approximately 7 per cent.

679 Mr. Freeman: Q. When did you first learn of the Cross system of stoker control for maintaining or holding the fire within a stoker?

A. Oh, I believe along about 1931 or the latter part of 1930. I think it was about 1931.

Q. This morning you introduced Defendant's Exhibit Z, and I ask you to look at the letter dated June 14, 1929, and tell us if it is not a fact that you then learned of the Cross system of stoker control?

A. I can tell you as a fact I never heard of it.

Q. You did receive the letter?

A. Yes.

Q. Of June, 1929?

A. The company did receive the letter, yes.

Q. And that letter was written on a bulletin or publication disclosing in full the Cross system of stoker control, is that not so?

A. Does it say anything on there about a Cross patent?

Q. I am asking you about the Cross system.

A. I am asking you back: Does it say anything about the Cross patent?

Q. Will you please answer my question and stop arguing?

A. What was the question?

(The last question was read by the reporter as above 680 recorded.)

A. It is.

Q. And that letter has been in your files since 1929?

A. It has.

Q. So you then learned of the Cross system of stoker control in 1929?

A. No, sir; 1931 was when I first knew about it.

Q. The letter of June 14, 1929, forming a part of Defendant's Exhibit Z was taken from the Mercoid files, was it not?

A. Correct.

Q. Do you know whether or not any of your salesmen

called on the Cross Coal-O-Matic Stoker Company in 1929 or 1930?

A. No, they did not.

Q. Do you know whether or not any of your salesmen followed up your inquiries received on or about June 22, 1929, from the Cross Coal-O-Matic Corporation?

A. Well, if you want to refer to Detroit Lubricator Company as our salesmen, I would say yes, but when you are talking about our salesmen, I am talking about the men operating directly out of our main office or one of our branch offices and the account was being handled through a distributor.

681 Q. It was your product?

A. Yes, sir.

Q. When did you learn about Cross Coal-O-Matic using a hold fire control as part of the stoker system?

A. Well, when this correspondence first came along.

Q. And that was along in 1929?

A. That is correct.

Q. And the patent issued in 1930 and then you learned about the patent shortly thereafter, is that correct?

A. About 1931.

Q. About the time your company was negotiating for a license?

A. That is correct.

Q. This morning you read a letter from the Brownell Company forming a part of Defendant's Exhibit X, dated August 14, 1930. That is a letter written by yourself to the Brownell Company. I am wondering what modifications you had reference to with respect to the control when you wrote that letter?

A. I believe that it was brought out in another letter that I had dictated and that I read this morning.

Q. You did not read from the letter of August 14, 1930, any reference to modifications, did you?

A. No.

682 Q. Now, what were those modifications?

A. Well, the different lengths of sleeve to adapt the control for stack mounting.

Q. Were there any other modifications?

A. No.

Q. How about the stainless steel well?

A. Well, I have seen that M-51 installed in so many ways that the stainless steel well, while we might tell

people that it was essential in order to get a little larger sale, it was not essential.

Q. When did you first see an M-61 installed with a stoker?

A. I would not recall that.

Q. Was it in your plant?

A. I would not recall that, Mr. Freeman.

Q. Do you have occasion to observe the testing of equipment in your plant?

A. Oh, occasionally.

Q. And is the equipment tested under actual operating conditions; that is, with a stoker?

A. That is correct.

Mr. Moore: I object, your Honor. There has been nothing on direct examination about how they tested equipment.

683 The Court: He has answered.

Mr. Freeman: Q. It is the practice of your company, is it not, to give patent guarantees to customers of yours?

A. We call them patent warranties.

Q. And you agree to protect the customer if the product is used in accordance with your recommendations?

A. We agree in accordance with the terms of said warranty.

Q. Will you answer my question?

A. I did.

Q. Do you agree to protect the customer if he uses the product in accordance with your recommendations?

A. If you will give me a copy of our warranty I will read it, but I do not recall the exact contents of it or whether we agree to protect them.

Q. Let me ask you this question: If I buy a control from The Mercoid Corporation and I use it in accordance with your published circulars, in accordance with the wiring diagrams that you send along with the control, will you protect me against patent infringement if I am sued for patent infringement?

A. In accordance with the terms of our warranty.

Q. Do you answer your customers exactly in the same way as you have answered me?

684 A. There is a copy of our catalog. Our patent warranty is shown on such and such a page, and it fully covers our position in the matter.

Q. And it was in accordance with your warranty that The Mercoid Corporation defended the suit in Kansas City involving the Cross patent, is that correct?

A. Yes, sir.

Q. Your company decided not to take a license under the Cross patent because it thought the patent was invalid, is that correct?

A. I believe I answered that, Mr. Freeman.

Q. I am asking you, Mr. Owens.

A. If I can add six more words, I will answer yes or no. No, I never did beat my wife.

Q. Well, will you please answer my question?

A. I cannot answer yes or no when you put the question that way.

Q. Answer it any way you want to answer it.

A. All right.

Q. Will you please answer?

A. What is the question?

(The question was read by the reporter as above recorded.)

A. It is not correct.

685 Q. You read from a letter forming a part of Defendant's Exhibit EE, which you stated was under your personal supervision and taken from the files of your company, as follows:

"As to the Cross patent, I am sure that Mr. Langdon Moore gave us the opinion that this would merely be a donation on our part, if we took out a license, and that the Cross patent, in view of the prior art, would have no value."

That is correct, is it not?

A. That is.

Q. And that is one of the reasons why you did not take a license?

A. That is one of the reasons.

Q. And another reason was that the royalty was too high?

A. The royalty was too high.

Q. And I take it from your exhibit, Defendant's Exhibit FF, that shortly prior to December 9, 1931, your company had come to the conclusion that it did not want a license under the Cross patent, is that correct?

A. It did.

Q. You spoke about having some conferences with re-

spect to the Cross patent. With whom did you have 686 such conferences?

A. Mr. Reed and Mr. Van Ness.

Q. Those were executives of The Mercoid Corporation?

A. President and vice president.

Q. And they were the only conferences that you had?

A. Oh, there might have been others. I do not recall them at the moment.

Q. The other conferences were with members of your own organization?

A. Mr. Reed and Mr. Van Ness.

Q. You said possible other conferences, and I said others who were of your own organization.

A. Yes; Mr. Reed and Mr. Van Ness. I had other conferences with them besides the one that you are referring to.

Q. Are they the only people you had conferences with with respect to the Cross patent?

A. Yes, sir.

Q. What had been the price trend of the hold fire type of controls sold by The Mercoid Corporation?

A. About the same as other controls; consistently downward.

Q. That is, prices in 1930, when your company came out with the M-61, were somewhat higher than prices to-687 day for the same type of control?

A. Considerably higher, yes.

Q. And has that been a steady downward trend from 1930 up to the present time?

A. Yes; there was not any intervening price raises, if that is what you mean; any price revisions were revisions downward.

Q. And has that been true of your competition likewise?

A. Yes.

Q. In other words, the whole general control market has found itself with a downward price trend from 1930 up to about the present time?

A. That is correct.

Q. And when did you first learn of the Iron Fireman type of control of the timer type?

A. About 1931.

Q. At about the same time you learned of the Cross system of temperature operation for the hold fire, is that correct?

A. That is correct.

Q. And has your company been in competition with other control manufacturers making the timer type of control?

The Witness: Will you please read the question?

(The question was read by the reporter as above 688 recorded.)

A. Not until about 1936 or 1937.

Q. When did you first learn of the Teeple Company?

Mr. Moore: I object, your Honor. Nothing has been said on direct examination about the Teeple Company.

Mr. Freeman: If your Honor please, this witness has said there were only three companies, and he enumerated them. Now, I can ask him if there were other companies, and I am just helping him out by referring to the Teeple Company, which was also a control company.

A. I do not mind answering that, because I did not know of Teeple at the time, but it was mentioned in the direct testimony.

Mr. Freeman: Q. You do know that the Teeple Company did make stoker controls?

A. Not until just a few years back.

Q. You knew it at the time you testified this morning?

A. I beg your pardon, Mr. Freeman. I knew it, say, from 1936 or 1937 on that there was such a company as Teeples, but I never classed them as competitors of ours back in 1930 or 1932, whatever the years were that Mr. Moore asked me about.

Q. But the company did make timer controls in 1931, did it not, for maintaining a fire in a stoker?

689 A. We all looked upon it as the Iron Fireman and referred to it more as the Iron Fireman than we did as Teeples.

Q. There were other companies then, whether you call them a control company or a stoker company, making controls for the purpose of maintaining a fire in a stoker?

A. Yes. Iron Fireman had patents on the timer.

Q. Now, were there any other control companies back in 1930 making heater equipment controls that you failed to mention?

A. There possibly were.

Q. You knew that the Penn Company was making heating equipment controls in 1930, did you not?

A. I believe I mentioned Penn.

Q. Are there any other companies?

A. I mentioned Minneapolis-Honeywell and Penn and Time-O-Stat.

Q. Did you ever hear of the Cook Electric?

A. We never considered Cook Electric competitors.

Q. They still make controls, do they not?

A. They are still not competitors; to my mind, at least.

Q. How large does a company have to be before you consider it a competitor of Mercoid's?

690 A. Well, almost as big as Minneapolis think they are.

Q. Oh, will you please answer my question?

A. I did. In the same tone it was asked.

Q. It is true, is it not, that Iron Fireman today is one of the largest stoker manufacturers in the country?

A. They are probably about the second largest.

Q. And what company would you call the first largest?

A. Sears Roebuck.

Q. Does Sears Roebuck actually make their own controls?

A. A subsidiary company makes them, yes.

Q. What is the name of that company?

A. Sampsell Time Controls Company.

Q. And do they make a temperature operated control of the Cross system, or do they use a timer control system following Iron Fireman?

A. They make a timer under the Sampsell patents, issued or applied for, I do not know which.

Q. Who makes the Iron Fireman controls?

A. Teeple Manufacturing Company, Teeple something; I know it is Teeple.

Q. Did the Russell Electric Company manufacture heating controls, or is that another company that is not considered competition?

A. No; they finally put themselves out of business.

691 Q. But they were in business making heating controls, is that correct?

A. We never considered them a competitor, if that is what you are driving at.

Q. You have spoken about competition. You know the General Electric manufacture heating equipment controls, do you not?

A. No, I do not believe that I do.

Q. You do not consider them as competition?

A. Well, I never lost any business to them, Mr. Freeman.

Q. But you do know that General Electric manufactures stoker controls, do you not?

A. No, I do not know that. In fact, I never heard of them making controls, stoker controls.

Q. In compiling the chart, Defendant's Exhibit OO, of Mercoid's sales, am I correct in my understanding that you took the type of control that your company was recommending for hold-fire purposes and you computed those figures?

A. The type we were selling, Mr. Freeman.

Q. And the type you recommended?

A. We were selling any type they wanted. We were not recommending any particular type. We were selling the type they wanted, any type they wanted.

692 Q. When you made up the chart showing Mercoid sales did you use all type M controls, or did you use the type that your company recommends for use in connection with stokers?

A. We used the M-61 type, we used the TJV and JMV. We used the TV-2, and the T8-V and all types of fire maintaining controls such as we had sold over the period of years shown on that chart.

Q. And those recommended for stoker control, is that right?

A. The kind commonly used for stoker control, we made no recommendation. We sold them whatever they wanted.

Mr. Stone: I wonder if I might have the answer to that question, the one that lists those controls.

The Court: They sold them whatever they wanted.

(The answer was read by the reporter as above recorded.)

The Witness: Those are timers.

Mr. Stone: Oh, yes, I see what you mean.

Mr. Freeman: Q. And I take it that the figures appearing on the chart or the curve showing the sale of stokers includes all of the stockers sold by Sears, which you testified to, was the largest manufacture of stokers, and the Iron Fireman, is that correct?

693 A. Well, I imagine it is. It was made up by the Department of Commerce.

Q. It should include those figures?

A. It should, yes.

Mr. Freeman: That is all.

*Cross-Examination by Mr. Stone.*

Q. You stated on direct examination several things about the way in which the defendant Mercoid did business. Through about how many dealers, and what not, do you market Mercoid controls, approximately?

A. Well, I am afraid I do not understand just what you mean by that.

Q. Well, about how many people or customers order controls from the Mercoid Corporation?

A. Oh, I could not say offhand.

Q. A thousand, two thousand?

A. Oh, I do not know how many customers we have on the books. On our mailing list we have probably thirty thousand names.

Q. Is it your understanding that these dealers stock controls or do not stock them?

A. Well, a dealer, as a rule, in the stoker business
694 cannot afford to carry much stock of any kind, and that is why we have distributors located around in different parts of the country, so as to make it easy for dealers to pick up controls as they may need them.

Q. How many distributors do you have?

A. Well, do you want me to go down the line and enumerate them?

Q. No; approximately.

A. Well, we probably have twenty-five or thirty.

Q. And these distributors do stock Mercoid controls?

A. Oh, yes, they carry their own stocks of Mercoid controls.

Q. Now, in preparing this chart, this lower line here represents Mercoid hold-fire controls that have been sold, is that correct?

A. We do not call them hold fire. We never did. That is a term adopted by Minneapolis-Honeywell. We call them fire maintaining controls.

Q. All right, we will use your language. This lower line represents fire maintenance controls, is that right?

A. That is right.

Q. Have these first-maintenance controls been sold to your distributors, or through your distributors?

A. We sell them to any of our distributors that
695 order them. We ship them to them, yes.

Q. And these distributors sell them to the people

that ultimately use them to put in the installations, is that right?

A. No, as a rule they sell them to dealers.

Q. All right. Now, they sell them to dealers, and what I am trying to get at is: On the M-61 control are those controls all out in installations now?

A. Are they all out in installations now?

Q. Yes; or have they gone out on installations? Let us put it that way.

A. Well, that is better. I think they have, yes.

Q. And the reason you think that is that perhaps because you were unable to get one yourself when we asked for one?

A. Did you ask for one?

Q. Yes, we did.

A. Who did you ask?

Q. I asked Mr. Moore.

A. Well, we generally have our customers come to us with an order when they want a control.

Q. And if they come to you—

A. We are in business to sell them, not give them away.

Q. And if they come to you for a special control, 696 the inference is within a reasonable time they go into an installation of the type that you design the control for, is that not correct?

A. Not many.

Q. And can we therefore draw the conclusion that the M-61 controls that the Mercoid Company has sold have actually gone into installations wherein there is a room thermostat in parallel with the M-61 in conjunction with the stoker motor or on a furnace?

A. Oh, you are getting technical now.

Mr. Moore: I object. The witness was never asked anything on direct examination about how an installation was made or what was sold with the M-61.

Mr. Stone: I will rephrase the question, your Honor. I think the pertinency of the question is clear. The pertinency of the question is: How many of these M-61 controls have actually gone into the type of installation which the department has said they were designed for, and he has stated that they have probably all left the distributors' shelves.

Mr. Moore: That is correct.

The Witness: Yes.

Mr. Stone: And he also stated that it was reasonable

to infer that they were used in the way they were
697 supposed to be used.

Mr. Moore: No, he did not state that.

The Witness: No.

Mr. Moore: He said on direct examination that when they left the factory they did not know how they were going to be installed.

The Witness: That is correct.

Mr. Stone: Q. Well, is it not a fact, Mr. Owens, that only the distributors stock these controls?

A. That only what?

Q. Only distributors stock the controls?

A. No.

Q. Who else stocks them?

A. The stoker manufacturers, to whom we sell the controls.

Q. All right. About over how long a period, do you suppose, would they keep a control? How long? How big a stock do they maintain?

A. Like all manufacturers, they endeavor at the close of the season to have their inventories as low as possible, and controls would come in, as far as they are concerned, in the same classification as raw materials.

Q. Mercoid stopped making the M-61 control in 1938, did it not; about then?

698 A. Yes, sir. We had no market left for the Figure 61 when you boys got through with us, so there was no reason for wasting space in the catalog on it.

Q. All right. By that time it was a reasonable inference to understand that the M-61 controls had gone into installations of the type that your literature indicated they were to be used for?

Mr. Moore: I object again, your Honor. The witness has already stated he did not know where they went.

Mr. Stone: This is a crucial point—

The Court: Your question is, is it reasonable to suppose that?

Mr. Stone: Yes.

The Court: He answered that question.

Mr. Stone: Your Honor, they were unable to produce an M-61 control when we asked for it a year ago, and the position that the plaintiff takes—

The Court: Why isn't that a matter of argument for you? They produced so many instruments, that it is reasonable to suppose that something happened to them, but

whether he can answer that question or not is something else.

Mr. Stone: If the controls were delivered to their own distributors and they were unable to get one back
699 from their own distributors, it seems to me it is reasonable to infer that they must have been sold on down the line to someone who used them in the way they were supposed to be used.

The Court: We have it in the record that they were delivered to their distributors, and you state the reasonable inference is what you just stated. That is argument, is it not? Objection sustained.

700 Mr. Stone: Q. Now, when did you stop making the TJV control?

A. Because we made an improvement in it and put it all in one case, and made JMV out of it.

Mr. Stone: The question was "when". Will you read the question.

The Court: The question was "when".

(The question was read by the reporter as above recorded.)

A. About a year or a year and a half after the TJV first came into the market we had the JMV all set.

Mr. Stone: Q. That would be about 1936 or 1937?

A. 1936; the fall of 1936.

Q. The distributors would stock the TJV, wouldn't they?

A. Well, they did not stock many of them.

Q. The TJV was ordered as required, is that it?

A. Practically, yes.

Q. Now, on the JMV, what is the selling price of that control?

A. Well, to the manufacturer it is $13 each net.

Q. I mean to the ultimate purchaser?

A. I would not know.

Q. Is that control stocked by the distributors?

A. No.

701 Q. That control is ordered by the distributors when needed?

A. On special demand.

Q. How much time elapses from the time you receive an order to the time it reaches the persons who orders the control; a week, two weeks?

A. I would not know.

Q. It is greater than 30 days?

A. It would be less than 30 days, I would imagine.

Q. The customary way of doing business in this field, then, is to have someone in the field who needs the control, place an order with the distributor or a dealer, and ultimately it reaches The Mercoid Corporation, is that correct?

A. That is one method.

Q. Is that the general method in a control such as a JMV?

A. No.

Q. What is the general method?

A. The general method is for the stoker manufacturer to place the order. We are apt to get more orders from stoker manufacturers for that type of control than we are from distributors.

Q. The stoker manufacturers sell their stokers to dealers or to men who install the stokers; and these men at the time they take delivery of the stoker, specify the type of controls they want, and then the stoker manufacturer gets the control, is that it?

A. Well, take in the case of this Smith case, for instance. Now, we get a stock order from Will Burt Company at Orville, Ohio. Maybe they will order a hundred set of controls.

Q. Yes.

A. We ship to the Will Burt Company. They get an order from a dealer out in Galena, Kansas, and he specifies the type of stoker and the type of controls he wants, and he sells that to Mr. Smith, possibly puts the installation in Mr. Smith's home, and it is a far cry from the time it leaves our factory until it is installed in Mr. Smith's basement.

Q. But, generally speaking, even the stoker manufacturers try to clear their books of inventory on controls at least once a year?

A. Yes; they have it pretty well down by the end of the year.

Q. So that one can conclude that at least a year or two years after a control has left your plant it has been used some place for the purpose for which it was intended, is that correct?

A. That is correct.

Mr. Stone: That is all, your Honor.

*Redirect Examination by Mr. Moore.*

Q. I believe Mr. Freeman was asking you in regard to Defendant's Exhibit OO, the total sales of stokers using fire maintaining controls which were obtained from the bulletins of the Department of Commerce. Now, each one of those bulletins are entitled "Mechanical Stokers." He asked you if there was anything there that showed whether they were automatically operated and had fire maintenance controls, I believe. Now, I ask you to read on this first bulletin, 1932, on page 2, just those first two paragraphs. They are short and I think that will explain the whole situation.

A. "Note: A mechanical stoker is a device consisting of a mechanically operated feeding mechanism and a grate and is used for the purpose of feeding solid fuel into a furnace, admitting air to the fuel for the purpose of combustion and providing a means for removal of discharge of refuse. Hand stokers are not included."

704 Q. Now, I believe on this bulletin it says, "Stoker sales are those of class 1 and class 2."

Now, there is class 1 and class 2 defined in that bulletin. What does that say?

A. They are: "Class 1. Residential, capacity less than 100 pounds of coal per hour.

"Class 2. Apartment house and small commercial heating jobs, capacity 100 to 200 pounds of coal per hour."

Q. Did you read that second paragraph?

A. No.

Q. Or not?

A. No.

Mr. Freeman: Is this going into the record or not?

Mr. Moore: I am asking him now if he read the second paragraph or not.

The Witness: Yes, I read the note.

Mr. Moore: Q. And that states that hand stokers are not included, does it not?

A. Hand fired.

Q. You were also asked on cross-examination in connection with this first letter from the Cross Coal-O-Matic Company dated June 11, 1929. Do you remember having seen that letter before?

705 A. No, I do not remember seeing it until recently.

Q. Have you ever looked over the display on the back of that and in the center?

A. No, I have not.

Q. I believe you were asked if this was an illustration of the Cross system were you not?

A. No, not exactly.

Q. Or words to that effect?

A. Yes.

Q. Now, if you have not seen this for a long time, will you kindly inspect it carefully and see if there is anything in there stated about a fire maintenance control? (Handing document to the witness.)

A. There is absolutely nothing in here regarding a fire maintenance control.

Q. Now, this was in 1929. I did not ask you to read the last letter in this Cross correspondence, because I did not want to burden the record. Now, there is a letter of November 11, 1930, which has been admitted by the plaintiff Mid Continent as being genuine. Will you please read that letter?

A. This is a letter from the Cross Coal-O-Matic Company, Kansas City, signed by Walter M. Cross, Jr., to The Mercoid Corporation, Chicago, attention of Albert L. Schiff:

796 "We wish to advise that we are using and have been using for a period of a couple of years a good many of your controls purchased through the American Radiator Company of this city. We find it convenient and it is our impression or understanding that our discounts from them and from you direct are the same. The American Radiator Company gives us very good service and we have dealt with them up to the present. If any changes are advisable we will be glad to consider same."

Q. Then the American Radiator Company of Kansas City was a distributor, was it not, of The Mercoid Corporation?

A. They were.

Q. And then from that letter they have been buying Mercoid controls from approximately 1928?

A. They were.

Q. Now, on this letter from Cross Coal-O-Matic Company, of June 11, Defendant's Exhibit Z, there is an illustration of a stoker installation and certain controls are shown. Do you recognize any of the controls as illustrated there?

A. I recognize the Mercoid combination pressure con-

trol, the low water cut out mounted at the top and the
707 side of the boiler.

Q. What was the number usually applied to that Mercoid control at that time when this letter was written, which was in 1929?

A. I believe that was our 121.

Q. Can you pick that out in the catalog of The Mercoid Corporation?

A. Oh, yes.

Q. Of 1929?

A. Yes.

Q. This is Defendant's Exhibit E, Mercoid Corporation. (Handing document to the witness.)

A. It is probably Figure 72, I believe.

Q. Of 1929. Can you find it in there?

A. Yes, easily. That is the Mercoid Figure 71, combination pressure control and low water cut out.

Q. Now, will you step down here before the court and point out here on this small figure where you find the Mercoid control?

A. This control right here, your Honor. (Indicating.) This control shown located at the top of the boiler on the right hand side looking at the photograph is the Figure 71 Mercoid combination pressure control and low water cut out described on page 18 of the catalog H-5.

708 Q. 1929?

A. 1929.

Q. All right. Now, on the inside of this pamphlet, there are seven excellent reasons why you need the Cross Coal-O-Matic stoker. Will your state whether or not any of those reasons refer to fire maintenance?

A. I looked them over before, and there were no reasons expressed whatsoever as regards fire maintenance, with the exception of paragraph 4, which comes the closest to it, and that reads:

"Perfect automatic control including low water cut out steam pressure and thermostat control. When desired temperature is reached coal feeding stops until lower temperature starts motor."

But there is no explanation of the lower temperature.

Mr. Moore: May it please your Honor, in introducting the letter this morning, that is, the Cross Coal-O-Matic Company letter of June 11, 1929, as part of Defendant's Exhibit Z, the entire folder was not reproduced. I will

have a photostat of that made and I would like to have that added and either introduced now—

Mr. Stone: It was introduced. Here it is.

Mr. Freeman: That is where we found it.

709 Mr. Stone: That is where we found it.

Mr. Moore: Is that the one in evidence? I beg your pardon. It was complete, your Honor.

Q. I believe on cross-examination by Mr. Stone there was reference made to distributors and dealers and manufacturers, and I do not believe a clear distinction was made between distributors and dealers. Does The Mercoid corporation have any dealers?

A. No, we do not.

Q. Who does have dealers?

A. Well, dealers as ordinarily referred to, are companies dealing in the retail of oil burners, stokers, or automatic heating equipment.

Q. Then a dealer may handle an oil burner and a coal stoker and a refrigerator, is that the idea?

A. That is absolutely correct.

Q. And the manufacturers you referred to are the manufacturers of automatic stokers, is that correct?

A. That is correct.

Q. And they buy from the Mercoid direct, or from the distributors, is that the idea?

A. The manufacturers ordinarily buy from Mercoid direct.

Q. And the dealers buy from a manufacturer or from a distributor?

710 A. That is correct.

Mr. Moore: In order to keep the record correct, your Honor, in introducing Defendant's Exhibit Z, the letters were not all identified, except under the general heading of the letters which Cross Coal-O-Matic Company had admitted to be genuine, and I believe that I failed to introduce or to ask to be marked the shipping notice which the witness referred to as being attached to the letter of August 28, 1930, in reply to the letter of August 20, 1930. A photostat of that should be noticed as attached and appears in the photostatic copy, but it was not specifically mentioned.

Also I believe I failed to identify the letter of September 2nd and the letter of November 11, 1930, as being included in that exhibit, and I would like to have that made clear, to keep the record straight.

The Court: Are there any further questions?

Mr. Freeman: Are you through now?

Mr. Moore: I believe so.

Mr. Freeman: We are through, with the exception that we would like this witness to produce those letters we called for earlier, because we may want to ask him a question on it, or question him further.

The Court: Those three letters; see if you can find them.

Mr. Moore: I will try to have them here tomorrow morning.

The Court: Mr. Stone, have you any questions? Are you through with this witness?

Mr. Stone: Except if tomorrow—

The Court: He is through with his testimony. He can look for these letters, and then if you want to put him back on the stand, you may.

Mr. Moore: And I will be entitled to redirect?

The Court: But we are finished with this gentleman now?

Mr. Moore: Yes, sir.

The Court: We will recess.

Mr. Stone: I wonder if I might have these letters which you placed on his Honor's desk? I would like to take them home to examine.

Mr. Moore: Yes, but give them back to his Honor.

The Court: All right.

Mr. Stone: That is the only set and I would like to examine them.

The Court: All right. Ten-thirty tomorrow morning.

Whereupon an adjournment was taken to Tuesday, September 16, 1941, at 10:30 o'clock a. m.

712 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company
*vs.*
The Mercoid Corporation.
} Before Igoe, J.

Tuesday, September 16, 1941,
10.30 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Barr, Freeman and Moore.

Mr. Moore: May it please your Honor, I was requested to produce certain letters from the files of The Mercoid Corporation. One was the letter referred to in the correspondence relating to the Brownell letters in Defendant's Exhibit GG, and that is the one that I believe you asked for. (Handing document to Mr. Freeman.)

Mr. Freeman: Have you the others?

Mr. Moore: And you asked for one referred to in the Combustioneer letter, Defendant's Exhibit II. I think these two are the ones that you referred to in that
713 connection. The guarantee, was it not? (Handing document to Mr. Freeman.

May it please your Honor, I have been requested by the attorneys for both Mid-Continent and Minneapolis-Honeywell to offer in evidence photostats of the guarantee against infringement suits referred to in the letter of Combustioneer of June 14, 1932, Defendant's Exhibit II, and I hereby offer a photostat of this guarantee as Defendant's Exhibit II-1.

(The exhibit was so marked.)

Mr. Moore: I have also been requested to introduce in evidence the letter of June 4, 1931, referred to in the Will-Burt Company letter of February 29, 1932, Defendant's Exhibit HH, and I offer a photostat of this carbon of the letter addressed to the Will-Burt from the president of The Mercoid Corporation, dated June 4, 1931, as Defendant's Exhibit HH-1.

(The exhibit was so marked.)

Mr. Moore: May it please your Honor, there was ob-

jection to the introduction of certain evidence because those letters had not been produced. They have now been produced and I believe the exhibits I introduced are now properly introduced in evidence, are they not?

The Court: Yes, sir.

714 Mr. Moore: Yesterday the witness Owens referred to page 18 of the catalog of Mercoid Exhibit E, and I would like now to introduce photostats of page 18 to which the witness referred and ask that they be made a part of the original exhibit E which contains photostats of certain other pages in that publication. Is there any objection?

Mr. Freeman: No objection.

Mr. Moore: I believe Mr. Freeman has the privilege of further carrying on with Mr. Owens if he desires.

Mr. Freeman: No, we are through.

The Court: I thought they had finished with Mr. Owens last night.

Mr. Moore: Subject to the production of those letters and in the event Mr. Freeman wanted to examine him on them.

Mr. Freeman: Mr. Moore, with respect to Exhibit OO, the chart and the figures compiled by some official secretary or treasurer of The Mercoid Corporation, if you can get any officer of The Mercoid Corporation, or if you will make a statement here on the record as to the number of temperature operated controls and the number of timer operated controls, in other words, give us a breakdown instead of the aggregate figures, that will satisfy us with that respect.

715 Mr. Moore: I will be very glad to do so. I am in no position to make a statement myself, because I have not inspected the books. Now those figures were taken from the books of the corporation and to break them down the books would have to be gone over again. Now, I do not think that Mr. Courteol or Mr. Owens are in the position to do that without inspecting the books, but if the court would like, I will be very glad to have Mr. Chambliss, who is an expert accountant, go through the figures which he has already presented in his affidavit and break them down into temperature operated and time operated controls.

Mr. Freeman: Mr. Moore, undoubtedly he has his work figures, and all I wanted is the number of each.

The Court: He says he can produce those.

Mr. Moore: I will have Mr. Chambliss produce them.

The Court: All right, let's have something else.

Mr. Moore: The next witness is Mr. Courteol, but before placing him on the stand I would like to make a statement.

The defendant in its answer averred: Plaintiff is utilizing the Cross patent here in suit to establish a monopoly in the sale of devices per se capable of and intended for use in heating systems, which devices do not come within the boundaries of the Cross patent, and in its counter
716 claim the defendant averred; defendant believes, and, therefore, avers that the plaintiffs Mid-Continent Investment Company, Minneapolis-Honeywell Regulator Company with Detroit Lubricator Company did deliberately, willfully and wrongfully conspire among themselves to substantially lessen competition and to establish a monopoly in the sale in interstate commerce of individual devices, controls or articles or products for use in heating systems, which individual devices are not covered per se by the said Cross patent in suit, by conveying to purchasers of each individual control, article or product, for use in heating systems of the type described and claimed in the Cross patent when purchased only from Minneapolis-Honeywell Regulator Company or Detroit Lubricator Company a license to use the system described and claimed in the Cross patent, and it further averred that the acts of intimidation, coercion and threats of suit by the plaintiff Mid-Continent Investment Company hereinbefore complained of were at the instigation of its licensee Minneapolis-Honeywell Regulator Company joined as a party plaintiff herein to perpetuate the willfully planned monopoly in controls, products or articles in interstate commerce for use in heating systems, which articles are not covered per se by the claims of the Cross patent,
717 and to make the defendant a party thereto by accepting a similar license.

There are six licenses in the pleadings produced by the parties and admitted to be genuine. The first is an exclusive license granted Minneapolis-Honeywell Regulator Company in 1931; the second is an agreement between Minneapolis-Honeywell Regulator Company and the Penn Electric Switch Company, dated in 1932; the third is a sublicense to the Detroit Lubricator Company granted in 1933; the fourth is the license proposed by Minneapolis-Honeywell to The Mercoid Corporation in 1935; the fifth

is the Mid-Continent Investment Company's exclusive license to the Minneapolis-Honeywell Regulator Company in 1928, and the sixth is the license proposed by Mid-Continent Investment Company to The Mercoid Corporation in 1940.

The next witness called for the defendant will by Mr. Hugh Courteol, president of The Mercoid Corporation. He will testify as to the records of The Mercoid Corporation relating to the circumstances surrounding the license proposed by Minneapolis-Honeywell Regulator Company to the Mercoid Corporation in 1935; also as to the events leading up to the correspondence between Mid-Continent and The Mercoid Corporation, including the license 718 proposed by Mid-Continent to Mercoid in 1949, and as to the acts of intimidation, coercion and threats of suit by the Mid-Continent Investment Company.

Mr. Courteol, will you please take the stand?

HUGH COURTEOL, called as a witness on behalf of the defendant, having been first duly sworn, testified as follows:

*Direct Examination by Mr. Moore.*

Q. Will you please state your name, age, residence and occupation?

A. Hugh Courteol, age 44; residence 2200 Harrison Street, Evanston, Illinois; occupation, president of The Mercoid Corporation.

Q. How long have you been president of The Mercoid Corporation?

A. Since March, 1938.

Q. Who are the vice presidents of The Mercoid Corporation at this time?

A. Mr. J. W. Owens, Mr. A. N. Schultz, Mr. R. E. Fisher.

Q. What department is Mr. Owens in charge of?

Mr. Freeman: That is objected to. That has already been answered. 719

The Court: He is still in charge of the same department as when he testified?

Mr. Moore: His testimony has not been corroborated.

Mr. Freeman: It is undisputed. There is no question about it.

The Court: It is undisputed. Objection sustained.

Mr. Moore: If there is no question about the duties of Mr. Schultz and Mr. Owens, I will ask no further questions about that.

Q. Whom did you succeed as president?

Mr. Freeman: That has already been answered once.

The Court: The objection is sustained.

Mr. Moore: Q. What were the products sold by Mercoid Corporation when you became president in 1938?

A. Mercoid Corporation was manufacturing and selling a line of electrical automatic controls.

Q. What kind of controls were they?

A. Controls responsive to pressures, temperatures. We also were manufacturing some timing devices.

Q. Now, for what purposes were the controls used?

A. Various purposes; both in the domestic engineering and the industrial engineering field. They had a wide range of application.

720 Q. Will you please give some examples of the applications in the domestic field?

A. Well, applications in the domestic field for oil burners, stokers, refrigeration equipment; well, very little refrigerator equipment in the domestic field, that is, in recent years.

Q. Are there any other uses in the domestic field?

A. Well, domestic heating, air conditioning, stokers, gas furnaces.

Q. Well, what do you refer to as industrial uses?

A. I am speaking now of domestic. You asked the question on domestic.

Q. The lines overlap. What do you consider the industrial usages?

A. I would consider the industrial usages of Mercoid controls, well, to pick an example, the large Plantation pipeline that is coming out of Louisiana into the east will be equipped with certain of our Mercoid controls. That is an industrial. We would call that an industrial application.

Q. What controls will be used in that pipeline installation?

A. Those are both of the temperature and pressure variety.

721 Q. Who did you consider the largest competitors in this business when you became president of The Mercoid Corporation?

A. The Minneapolis-Honeywell Regulator Company was by far the outstanding competitor. They dominated the field.

Q. Were there any other large competitors?

A. There was one other that I recall, the Penn Electric Switch.

Q. To whom did The Mercoid Corporation sell these instruments or controls?

A. It sells its instruments to manufacturers and distributors.

Q. What is the set-up of your sales organization?

A. Our sales organization?

Mr. Freeman: I object to that. It has been answered once. There is no question concerning their sales set-up. It was answered by their sales manager.

The Court: Why do you have to go into that again?

Mr. Moore: Q. Does The Mercoid Corporation install its instruments in the homes of its users?

A. No, it does not. It has a policy against that.

Q. Now, when you came with The Mercoid Corporation in 1938, was the corporation selling controls to the 722 manufacturers and jobbers of coal stokers?

A. Yes, to a certain extent they were.

Q. Did you sell room thermostats?

A. Yes.

Q. What other controls did you sell to coal stoker manufacturers and jobbers?

A. We sold the coal-stoker manufacturers various temperature and pressure controls, in addition to which we sold some timing devices.

Q. And then you did sell Mercoid controls for the purpose of maintaining fire in the furnace when the heat in the rooms for long periods were not calling for coal stoker application?

A. Yes.

Q. Mercoid Exhibit Form P-90, dated September, 1937, Defendant's Exhibit P, which is a bulletin, refers to a stoker control. Is that one of the controls that Mercoid was selling when you came to the corporation?

A. Yes, in quite a limited way.

Q. That is a bulletin relating to the M-61, is it not?

A. That is correct.

Q. Now I show you Mercoid Exhibit O, which is Bulletin 241. That bulletin illustrates the Mercoid Stokatherm control, and I ask if that is one of the fire maintenance 723 controls sold when you became president?

A. Yes.

Q. I show you Mercoid catalog No. 400, certain pages of which have been introduced in evidence as Mercoid Exhibit Q, and call your attention to page 38, and ask you if those instruments that are illustrated there are other fire maintenance controls that you have referred to?

A. There is an out fire control listed on the page, otherwise they are.

Q. Now just briefly, what are those instruments?

A. The type TV-2 Mercoid Stoka-Timer, the type JMV Mercoid Stokatherm, and the type T-2 Mercoid Stoka-Timer.

Q. When you came to the Mercoid Corporation in 1938 was The Mercoid Corporation involved in any way in litigation?

A. Yes, we were involved in the defense of a user in a suit brought by the Mid-Continent Investment Company against one E. O. Smith. We were involved in another case, the so-called Zorro litigation, where the plaintiff was the Cleveland Trust Company and the defendant a user.

Mr. Freeman: I object to the last portion with respect to the Zorro litigation. It is absolutely immaterial. It is some other litigation and not involved in this contro-
724 versy at all, and I move that it be stricken.

The Court: Why should that motion not be allowed? The motion is allowed.

Mr. Moore: Q. Do you know whether or not one of the Mercoid controls was involved in this litigation against Smith?

A. One of the Mercoid controls was in the heating system which was involved.

Q. Are you acquainted with any of the circumstances in connection with the Mid-Continent *vs.* Smith case?

A. Well, I know something about it; I am not intimately acquainted with it, no.

Q. Most of that action occurred before you came with the company?

A. That is correct.

Q. Now, have you had your records searched for any correspondence between Mid-Continent Investment Company or Minneapolis-Honeywell Regulator Company and the Mercoid Corporation in relation to this Mid-Continent *vs.* Smith suit?

A. Yes.

Q. What is the letter that you have in your hand there?

A. I have a letter from the Minneapolis-Honeywell Regulator Company, dated September 16, 1935, ad-
725 dressed to Mr. Ira E. McCabe, The Mercoid Corporation, Chicago, Illinois.

Q. Will you please explain to the court who this Ira E. McCabe is and how this correspondence became a part of the Mercoid files?

A. Ira E. McCabe—

Mr. Freeman: Your Honor, we wish to object to any testimony on the part of this witness as to how this letter became part of the files. Apparently it was a letter written on September 16, 1935, and clearly this witness does not know. Now, we are not denying the letter.

The Court: How do you know he does not know?

Mr. Freeman: He was not with the company in 1935. He did not come with the company until 1938.

The Court: That being true, how can you say he does not know?

Mr. Moore: That is what I asked him to explain to your Honor, as to how he does know.

The Court: I do not know how you can stand here and say he does not know. This man is ready to take an oath and say he does know.

Mr. Freeman: All right.

The Witness: A. Ira E. McCabe is the licensor in con-
nection with the patents under which Mercoid Corpora-
726 tion manufactures its products. He is also operating with The Mercoid Corporation under the terms of an agreement which gives him the right to approve,—he has the responsibility of approving all matters dealing with patents in our company. If we should job an item which we do not manufacture ourselves, he still has the right of approval under the terms of this agreement with The Mercoid Corporation. Any correspondence that reaches Mr. McCabe,—and after all, he has been rather closely associated with the officials of Mercoid Corporation and before that the Federal Gauge Corporation over a great many years,—any correspondence that comes in, as soon as he is finished with it, it is made a part of the Mercoid files. He is so intimately known in the control industry that it is not unusual for someone to write him in connection with such a matter.

Mr. Moore: Does that answer your objection?

Mr. Freeman: Go ahead.

Mr. Moore: Q. I believe you started to identify this

letter when the objection was entered. Now, will you please identify the letter fully?

A. The letter is from Minneapolis-Honeywell Regulator Company, dated September 16, 1935, addressed to Mr. Ira E. McCabe, The Mercoid Corporation, Chicago, Illinois.

727 It is signed by "Harold." The typed name in the lower left hand corner is H. W. Sweatt.

Q. That is a short letter. Will you please read it?

A. "Dear Mac:

"I have had some wires from Walter Cross of Kansas City, asking for terms for license for you under the Cross patents. I have told him I would much prefer to arrange a license with you direct rather than through third parties, and if you are interested, I would be very glad indeed to get together with you and work on an arrangement which I feel would be satisfactory to you.

"Will you let me hear from you?

"Yours very truly,

"Harold."

Q. What is the next letter you have there?

A. The next letter is one from the Mid-Continent Investment Company, Kansas City, Missouri, dated September 17, 1935, also addressed to Mr. McCabe, care of The Mercoid Corporation, and signed by Mid-Continent Investment Company, Walter M. Cross, Jr.

Q. That is a very short letter. Please read that.

A. "Dear Mr. McCabe:

728 "I have been in touch with the Minneapolis-Honeywell Regulator Company by wire during the past week and have just received word from them that they would much prefer taking up the matter of terms of license with you directly.

"Mr. Sweatt advised that he had written you on the 16th concerning this. I presume he will be able to get you all the information you require as to requirements for a license.

"Would you mind getting in touch with me as soon as he has given you the proper information or if I can do anything for you to expedite your obtaining any of the information.

"With kind personal regards,

Mid-Continent Investment Company

By Walter M. Cross, Jr."

Q. What is the next letter?

A. The next letter is from the Minneapolis-Honeywell Regulator Company, dated November 6, 1935, addressed to

The Mercoid Corporation, Chicago, Illinois, attention Mr. Ira E. McCabe or Mr. L. B. Reed. This letter is signed by Harold W. Seatt.

Q. That is a very short letter. Will you please read that?

A. "Gentlemen:

729 "I am enclosing herewith draft of proposed sublicense agreement on the Cross patents, which our patent department has drawn up. Took them longer to get this out than I anticipated, and I hope this delay has not inconvenienced any of you down there.

Yours very truly,

Harold W. Sweatt."

Q. What is the next letter?

A. The next letter is a carbon copy.

Q. No, the letter, the original?

A. I am sorry. The next letter is from the Minneapolis-Honeywell Regulator Company, Minneapolis, Minnesota, dated December 12, 1935, addressed to Mr. Ira E. McCabe, The Mercoid Corporation, Chicago, Illinois. Signed by Harold W. Sweatt, President, Minneapolis-Honeywell Regulator Company.

Q. Will you please read the first paragraph?

A. "Dear Ira:

"Mr. Fisher returned from Chicago, and we have discussed points that came up in your meeting. Mr. Fisher has already handled the matter of extension and further patent data that Langdon wanted to see."

730 Q. Now will you please read the third paragraph?

A. "First, it was very strongly my thought, as far as Cross is concerned, that we should go ahead with him on the present basis with no effort at this time to make any change in our contractual relations with Cross. We feel that we are in a stronger position to push Cross as we are with the thought that the pressure that we can exert a little later on, cancellation if he will not play ball with us, would be stronger than any arguments about stopping at the present time. I want him to be assured of his revenue for next year, consequently I would not want to suggest any changes to Cross now, preferring to do it later in the year if we do not get suitable action, which I have every confidence we will get."

Q. Are you acquainted with the Mr. Fisher referred to in this letter?

A. Yes, I am.

Q. Is he in the court room at the present time?

A. Yes, he is.

Mr. Moore: Photostats of Minneapolis-Honeywell letter dated September 16, 1925, to Mr. Ira E. McCabe; Mid-Continent Investment letted dated September 17, 731 1935, addressed to Mr. McCabe; Minneapolis-Honeywell Regulator Company letter dated November 6, 1935, addressed to The Mercoid Corporation; and Minneapolis-Honeywell Regulator Company letter dated December 12, 1935, addressed to Mr. Ira E. McCabe, are offered in evidence as DEFENDANT'S EXHIBIT PP.

(The exhibit was so marked.)

Mr. Moore: Q. Did you receive this proposed license that is referred to in Mr. Sweatt's letter?

A. Yes.

Q. Can you produce it?

A. I can.

Mr. Freeman: Did you ask him if he received it?

Mr. Moore: If the company received it.

A photostat—before I offer this, and I failed to ask you in regard to those other letters which you produced, where did those letters come from?

The Witness: A. From the company files.

Mr. Freeman: We concede that they came from the company files.

Mr. Moore: Do you concede this comes from the company files? This license agreement?

Mr. Freeman: Yes, but I will not concede that this witness knows anything about it prior to the time that he 732 came into the employ of the company.

Mr. Moore: I have not asked him anything about what he knew about it.

A photostat of this proposed license agreement, proposed by Minneapolis-Honeywill to Mercoid Corporation in 1935, is offered in evidence as DEFENDANT'S EXHIBIT QQ.

(The exhibit was so marked.)

Mr. Stone: Your Honor, plaintiff Mid-Continent objects to the introduction of this license agreement on the ground that it shows nothing but the act of the party Minneapolis-Honeywell, and upon the further ground that there is pending in this court a suit which was pending prior to the filing of this suit between this defendant and Minneapolis-Honeywell, which suit contains a counter claim charging the defendant Minneapolis-Honeywell with certain acts such as are charged in this case.

The proffered license agreement between Minneapolis-Honeywell Regulator Company and the defendant Mercoid indicates nothing as to what the Mid-Continent Investment Company had to do with it. On the contrary, the very correspondence, Defendant's Exhibit PP, which they introduced here indicates that after the proffer of the license agreement they decided that they did not care to do business with the Minneapolis-Honeywell Regulator Company alone.

733 Mr. Moore: There is no evidence to that effect introduced as yet.

Mr. Stone: Have you not placed in evidence those five letters?

Mr. Moore: Not yet.

Mr. Stone: One moment, your Honor. Where are our copies of those five letters?

The Court: These, you mean? (Handing documents to Mr. Stone.)

Mr. Stone: Yes, sir.

The Court: There are only four there.

Mr. Stone: Were those offered in evidence?

Mr. Freeman: Yes.

Mr. Stone: The letter written Mid-Continent, dated September 17th, says exactly that.

The Court: Says exactly what?

Mr. Stone: It says, "I have been in touch with the Minneapolis-Honeywell Regulator Company by wire during the past week and have just received word from them that they would much prefer taking up the matter of terms of license with you directly."

The Court: How does that sustain your point?

Mr. Stone: My point is that this license agreement shows nothing as to anything that Mid-Continent In-
734 vestment Company did in conjunction with Minneapolis-Honeywell Regulator Company. This is a license agreement which was offered by Minneapolis-Honeywell Regulator Company, and there is pending in this court a lawsuit between Minneapolis-Honeywell Regulator Company and The Mercoid Corporation in which there are certain charges of monopoly.

Now, there has not been any groundwork made by the defendant up to this point to show that the relationship between the Mid-Continent Investment Company and Minneapolis-Honeywell was anything other than the ordinary licensor-licensee relationship. Now they come in with an

offer of license agreement which may show something about how Minneapolis-Honeywell conducts its business, but it shows absolutely nothing about how Mid-Continent conducts its business, nor does it show any coacting relationship between the two.

It seems to me that the result of that correspondence is that the defendant Mercoid was not satisfied to do business with one, but wanted to do it with the other. The conclusive result to me is that they are not operating together, and yet this is offered for a purpose which is not raised by the issues in this case.

This case charges the plaintiff Mid-Continent
735 and Minneapolis-Honeywell with jointly doing something that the defendant claims is unlawful.

Now they have pending in this court another suit in which they charge Minneapolis-Honeywell alone with doing something that is unlawful.

Mr. Moore: That has nothing to do with this case, your Honor.

Mr. Stone: This piece of evidence is exactly the kind of thing that they would introduce in that case.

Mr. Moore: How does he know?

Mr. Stone: By reading the pleadings. And I believe your Honor can take judicial notice of those pleadings.

This is a cause of action based under the monopoly statute, and is a cause of action which it has some body to.

Now, this position which Mr. Moore attempts to take here of trying a case against Minneapolis-Honeywell both here and there on a monopoly action does not seem to me to be correct.

Our own rules of federal procedure here state perfectly clearly that a counter claim must be based on a cause of action which is not pending in the court at the time. The
rules are perfectly clear on that point, your Honor.
736 If you will look at Rule 13, the second line says:

"A pleading shall state as a counter claim any claim not the subject of a pending action."

Now, there was pending in this court before the Honorable Judge Woodward a lawsuit brought by The Mercoid Corporation in which they charge the Minneapolis-Honeywell Company alone with having done certain acts. The only justification for having brought Minneapolis-Honeywell into this case was the charge in the counter claim that we and Minneapolis-Honeywell did something, the two of us did it, and I said that on its face that counter claim was

good and because it was good on its face I assumed they might be joined, but that does not render admissible here acts of Minneapolis-Honeywell alone.

This shows us absolutely nothing about any conduct by the plaintiff Mid-Continent. On the contrary, the import to these letters which Mercoid itself has introduced, the fact that that was turned down, shows perfectly clearly that the Mid-Continent was not acting with them.

Mr. Moore: It has not been shown yet that it has been turned down.

Mr. Stone: I, therefore, object to the admission of
737 this sublicense agreement on the ground that all it does it show a policy of the Minneapolis-Honeywell Company, if it shows anything, and that is not an issue in this case, but an issue in a pending case which was pending in this court at the time this suit was filed.

The Court: I do not suppose he can put in his case all at once. I imagine a charge of this kind is pretty much of the nature of conspiracy, and is alleged against both of the parties defending this cause set up in the counter claim. You cannot put in conspiracy all at one time. It has to be put in piecemeal. I do not know how he can go about an effort to prove it. Maybe when he finishes there will not be anything to it. I take it that is the way he is proceeding.

Mr. Moore: Then the objection to this piece of evidence is—

The Court: Overruled.

Mr. Moore: —overruled.

Q. What was the first intimation the Mercoid Corporation or you as its president received in regard to the present suit before the court?

A. That was a letter which we received from the Mid-Continent people some time in November, 1939.

Q. What is that letter you have you in your hand there?

738 A. It is a letter from the Mid-Continent Investment Company, Kansas City, Missouri, addressed registered mail to The Mercoid Corporation, Chicago, Illinois, signed by Mid-Continent Investment Company, by Forbes Cross, president.

Mr. Moore: May it please your Honor, this a very important letter and I, therefore, ask the witness to please read it.

Mr. Bair: What is the date of it?

Mr. Moore: November 24, 1939.

The Witness: A. The date of the letter is November 24, 1939.

Mr. Stone: Your Honor, I wish to make that objection which we mentioned yesterday, on the ground that these letters and many letters which are not at present in the pleadings are a part of an attempt to settle the differences between the defendant Mercoid and the plaintiff Mid-Continent as a result of the decision of the Circuit Court of Appeals for the Eighth Circuit affirming Judge Reeves' decision in the Southwestern Division of Missouri. All of these letters and all of the conferences that were held in conjunction with these letters were based upon a hope of settling our disagreements.

The federal rules of civil procedure, rule 68, 739 provide for an offer of settlement prior to trial or in advance of judgment.

The Court: You do not think that rule covers this situation, do you?

Mr. Stone: It shows, it seems to me, the policy of our rules. I have here a citation of cases which goes clear back into the history of our United States cases in which the following things are stated:

"The rule is not an admission made during or in consequence of an effort to compromise is inadmissible, but that an offer to do something by way of compromise, as to pay sums of money, allow certain prices, deliver certain property, or make certain deductions, and the like, shall be excluded; these cannot be called admissions, as they were made to avoid controversy and to save the expenses of vexatious litigation."

Here is another one:

"Correspondence between attorneys during an unsuccessful attempt to effect a compromise; excluded. Personal injury, defendant's letters offer a sum in settlement, 'carrying nothing which could be separated from the offer,' excluded. Personal injury; an unaccepted offer of settlement, excluded."

There is more. Mr. Wigmore cites perhaps a dozen cases. The citation is Wigmore on Evidence, Volume 4, Last Edition, page 35.

Mr. Moore: May it please your Honor, let us be 740 more practical than technical. These letters are in support of the defendant's contention that Mid-Continent attempted to coerce and force them into paying money

to which Mercoid contended they had no right. They are not questions of settlement. Each one of these letters is a threat, and I think your Honor will have to pass on them and read them before you can tell whether or not they are proper to be introduced in evidence. They are the basis upon which that contention was set up in the counter claim.

Mr. Stone: Your Honor, if the defendant Mercoid Company supports its statements by showing something we did to third parties, that would be something else again, but that is not what they are attempting to do. We brought suit against them in Missouri.

Mr. Moore: That is immaterial to this case.

Mr. Stone: Wait a minute. Their own witness yesterday stated that as a result their business was hurt in 1938 on the M-61 control, and that it was due to the fact that Judge Reeves handed down the decision holding the patent valid. In other words, the trade decided that the patent was good and they supported the judge to that extent, and that is why they took the M-61 off the market, presumably.

741 Now Mr. Moore is attempting to use this settlement agreement as a means of showing what the Mid-Continent's policy was in regard to maintaining the patent. Now we say that the settlement agreement, all of these papers, were entered into purely because the defendant had lost that case down there. This first letter—

Mr. Moore: That first letter is full of misstatements and is a threat.

Mr. Stone: Your Honor, you understand that we are charging the defendant with having ruined the value of our patent which was granted by the United States Government, and naturally we are not feeling very kindly toward the concern that did that.

Mr. Moore: Because the United States Government grants a man a patent does not grant him the right to write a lot of threatening letters and make misstatements that charges it to be infringed.

The Court: As I see it, you folks are working from different angles. Mr. Stone says this correspondence was an effort to compromise the claim, and you say it has nothing to do with the compromise at all. It is the manner in which they injured you.

Mr. Moore: I think your Honor ought to read that 742 letter before you pass on the letter.

The Court: We have no jury here. We will let the letters go in subject to your objection. If the objection is good, they will be eliminated. The record will show your objection.

Mr. Moore: Q. Will you please read the letter?

A. "Gentlemen:

"As you know, some time ago we brought a suit in the United States District Court, Southwestern Division of the Western Division of Missouri, against E. O. Smith, at Carthage, Missouri; for an injunction and accounting, alleging that a dual thermostatic control installed in a domestic heating plant in his home constituted an infringement of our Patent No. 1758146.

"Your company, through Mr. Langdon Moore, a patent attorney, took charge of the preparation and presentation of the defense in this action, the installation in the Smith home being a Mercoid installation furnished and installed through one of your dealers.

"In the pleadings filed in this case, the issue as to the validity of our patent was raised, and it was also 743 claimed that the installation in the Smith home did not constitute an infringement of our patent. The trial court held that the patent was valid and infringed. The cause was appealed to the Eighth Circuit Court of Appeals, where the action of the trial court was affirmed.

"Your company was notified by us in the year 1932 that the sale and installation of the dual thermostatic controls for maintenance of a firebed in connection with a coal stoker, and as advertised in your circulars, constituted an infringement of our patent.

"It now having been adjudicated that our patent is valid, and that you have infringed the same, before the institution of an action for damages we are writing to inquire as to whether you desire to discuss with us the question of the settlement of damages. If so, we shall be pleased to make an appointment at such time and place as may be agreed upon, where the matter may be fully discussed.

"We shall delay the institution of an action for a reasonable period of time to give you an opportunity to reply to this letter.

744 "Thanking you for the courtesy of a prompt reply, we are,

Very truly yours,
Mid-Continent Investment Company,
By Forbes Cross,
*President.*"

Q. Now referring to that second paragraph, I believe it states, "the installation in the Smith home being a Mercoid installation furnished and installed through one of your dealers." Is that a correct statement?

A. No, that is not. We did not make the installation. It was not a Mercoid installation, and the dealer certainly was not our dealer.

Q. Now referring to the beginning of the next to the last paragraph, it states: "It now having been adjudicated that our patent is valid, and that you have infringed the same," is that a correct statement?

A. Well, we do not think so. That is not a correct statement. We have not been as yet adjudged infringers.

Q. Now, what is the next letter that you have?

The Court: Suppose we take a recess for about ten minutes?

(A short recess was here had after which the following proceedings were had:)

Mr. Moore: Will you please read the last question?

745 I do not think it was answered.

(The question was read by the reporter as above recorded.)

746 A. I have a letter from the Mid-Continent Investment Company dated February 5, 1940, addressed to Mr. H. Courteol, The Mercoid Corporation, Chicago, Illinois. It is from the Mid-Continent Investment Company by Walter M. Cross, Jr.

Q. Will you please read that letter.

A. "Dear Mr. Courteol:

"I have reported to the company on our conference of January 31. During the discussion, certain alternatives came up which I would like to place before you for consideration.

"Two tentative plans of further compromise have been suggested. The first one would provide that the Mercoid Company pay $5000.00 to the Mid-Continent Company and in addition take a license under Patent 2,047,579, issued to the writer, and dated July 14, 1936. Such license would

provide that the Mercoid Company would pay $1000.00 initially and that such payment would include the right of the Mercoid Company to investigate the possibilities of a commercial control for use under the teachings of the patent. One year's time would be allowed for the investigation and if at the end of that time, Mercoid did not
747 desire to continue the agreement, it would be cancelled. However, if on the other hand, Mercoid should see sufficient merit in the application of the patent, the license agreement would continue at a reasonable minimum royalty which would apply against earned royalty. In this connection, I wish to point out that the patent is not limited to the use of the gas bulb or any one particular type of instrument, in its application to the art. There are, of course, many forms of such an instrument which would be immediately obvious to you.

"The second suggested tentative compromise would provide that the Mercoid Corporation pay the Mid-Continent Investment Company $5000.00 and in addition would acknowledge validity of Patent 2,047,579, above described, by means of a suitable instrument.

"Another point which I believe germane to your consideration of our proposal is that the $4,000.00 mentioned as our costs in the Smith case did not include any court costs and that such expenses amount to approximately another thousand dollars. We feel that these tentative
748 plans for compromise are as reasonable as could be expected of us and we wish to express our hope that we can arrive at a conclusion as suggested herein.

"Kind personal regards,

"Mid-Continent Investment Company

"By Walter M. Cross, Jr."

Q. I call your attention to the last paragraph on page 1 which states: "Another point which I believe germane to your consideration of our proposal is that the $4000.00 mentioned as our costs in the Smith case did not include any court costs." Who paid the court costs in that trial Mid-Continent versus Smith?

A. According to our record, we had paid them already.

Q. You lost the suit?

A. We defended the suit.

Q. You lost it and you paid the court costs?

A. We lost it and we paid the court costs.

Q. Then that is not a correct statement?

A. It is not.

Mr. Freeman: You mean Smith lost the suit, not Mercoid.

Mr. Moore: Certainly.

Q. Now, what happened after their letter of February 5th, 1940?

749 A. Well—

Q. Just briefly.

A. We considered the terms as offered,—we did not feel that they were equitable. We certainly took exception to the item of court costs. We felt that there were other patents being brought in to perpetuate an arrangement which we were very doubtful about anyway. So we let the matter drift along. We did not do anything about it at the moment.

Q. And was there a license finally submitted to The Mercoid Corporation from Mid-Continent?

A. Well, yes, there was.

Q. What is the next piece of correspondence you have there in regard to the license proposed by Mid-Continent?

A. I have a letter, a carbon copy of a letter, which The Mercoid Corporation wrote to Mr. Richard Spencer under date of August 1st, 1940, regarding a license proposed by Mid-Continent.

Q. Now, will you please read that letter?

A. "Dear Mr. Spencer:"

The letter is addressed to Mr. Richard Spencer, 135 South LaSalle Street, Chicago, Illinois.

"Dear Mr. Spencer:

750 "Mr. Langdon Moor has submitted to us the proposed license you delivered to him on July 24, 1940, in behalf of Mid-Continent Investment Corporation, under the Cross patent No. 1,758,146.

"As we understand it, this license is to be in full settlement of any and all past claims that Mid-Continent feels it has against Mercoid on account of the sale of Mercoid Controls which Mid-Continent allege infringed or contributed to the infringement of the Cross patent No. 1,758,146 and provides for future sales of such controls upon a royalty basis.

"As stated to Mr. Cross, Mercoid denies it has infringed the Cross patent and that the sale of its controls does not contribute to the infringement of the Cross patent. Mercoid feels that the Mid-Continent alleged claims may

have a nuisance value and therefore offered Mr. Cross a cash sum in settlement thereof.

"After reading the proposed license, Mercoid considers that it does not need a license to practice the invention described and claimed in the Cross patent as Mercoid has never made installations and has no intention of making installations which would practice the Cross invention.

751 Furthermore, all of the products, articles or controls made and sold by Mercoid for use in heating systems are made and sold by a license agreement under individual patents covering each of said products, articles or controls and therefore does not need an additional license to continue its manufacture and sale of such products, articles or controls.

"Upon further consideration of the proposed license it appears to Mercoid that this license is an attempt to expand the scope of the Cross patent to cover the use and sale of products, articles or controls which are not covered by the Cross patent and are specifically covered by the patents of the Mercoid's licensor.

"Mercoid therefore, does not care to accept the proposed license nor pay the sum of Five Thousand Dollars ($5,000.00) in settlement of the alleged claim of Mid-Continent against Mercoid.

"Thanking you for your courtesy in this matter, we are

"Yours very truly,"

and that letter was signed by myself.

Q. Did you receive a reply to that letter?

752 A. Yes, we did.

Q. What is that letter you have in your hand?

A. I have a letter from the firm of Spencer, Marzall, Johnston & Cook, 135 South LaSalle Street, Chicago, Illinois, dated August 1, 1940, addressed to Mr. Hugh Courteol, The Mercoid Corporation, Chicago, Illinois. The letter is signed by Richard Spencer.

A. "My dear Mr. Courteol:

"I have your letter of August 1, 1940 and upon reading it I do not see why in the world you ever asked me to prepare and submit to you a license agreement incorporating the terms of which you are well aware. Mr. Moore asked me to do this and I was careful not to include any provisions that could possibly be construed as adverse to your Company. However, your letter now indicates that you never had in mind the possibility of taking out a

license and prefer to stand upon your past infringement of the Cross patent. Accordingly, we are preparing to file suit against you and will endeavor to collect royalties upon every control you have sold of a type which might
753 possibly infringe the Cross patent, and will ask for triple damages and costs.

"Under the circumstances I am at a complete loss to know why either you or Mr. Moore asked me to prepare and submit the license agreement which I went to the trouble of preparing. You will hear from us in due course and I venture to suggest that you will eventually be called upon to pay considerably more than the settlement that we offered.

"Needless to say, the matter of infringement and validity is res adjudicata between your Company and our client, and the suit we will bring will not be one to find out whether or not you are entitled to practice the Cross process, but merely for an accounting to determine how much you owe Mid-Continent for having strenuously violated their patent in the past.

"In closing, let me advise you that I am reporting on Monday morning to the Office of the Judge Advocate General of the Navy Department for two weeks of training duty, but upon my return to Chicago at the completion of that time your suit will be promptly filed.

754 "Very truly yours,

"Richard Spencer."

Q. Now, I call your attention to a statement made in the first paragraph, which reads, "However, your letter now indicates that you never had in mind the possibility of taking out a license and prefer to stand upon your past infringement of the Cross patent." Is there any ground to base that statement on, past infringement of the Cross patent? Has The Mercoid Corporation ever been held to infringe a Cross patent?

A. No, it has not.

Q. Was there anything stated in any suit brought by Mid-Continent against Mercoid which would be res adjudicata as to the matter of infringement?

A. No.

Q. I also call your attention to the last sentence in that first paragraph: "Accordingly, we are preparing to file suit against you and will endeavor to collect royalties upon every control you have sold of a type which might

possibly infringe the Cross patent, and will ask for triple damages and costs." Did you hear anything further from Mr. Spencer in regard to other controls of The Mercoid Corporation?

A. Yes, we did.

755 Q. What is that letter you have in your hand?

A. I have a letter from Spencer, Marzall, Johnston & Cook, 135 South LaSalle Street, Chicago, Illinois, dated August 27, 1940, addressed to The Mercoid Corporation, Chicago, Illinois, Re: Infringement of Cross Patent No. 1,758,147. This letter is signed Spencer, Marzall, Johnston & Cook. It was sent registered mail.

Q. Will you please read that letter.

A. "Gentlemen:

"At the request of our client, the Mid-Continent Investment Company of Kansas City, Missouri, we hereby advise you that the Stokol Controls, in particular Control Type 115-W Immersatherm, which you are manufacturing and selling, are being used by dealers and others in direct infringement of United States Letters Patent 1,758,147 dated May 13, 1940 and granted to Walter M. Cross, which patent is now used by our client, and that you are contributorily infringing said Letters Patent.

"At the client's request, we request you to cease immediately such infringing acts and account to our client for

756 damages occasioned by your past infringement. If you do not promptly comply with this request, we will be obliged to institute suit for an injunction and an accounting and this will be done at the convenience of our client and without further notice.

"We would appreciate a response to this letter.

"Very truly yours,

"Spencer, Marzall, Johnston & Cook."

Q. Did you reply to that letter?

A. Yes, we did.

Q. Have you a carbon of that letter there?

A. I have a carbon of a letter dated September 4, 1940, addressed to Spencer, Marzall, Johnston & Cook, 135 South LaSalle Street, Chicago, Illinois, Re: Infringement Cross Patent No. 1,758,147.

Q. Who signed the letter?

A. I signed it.

Q. Will you please read that letter.

A. "Gentlemen:

"Your letter of August 27, 1940, stating that your client, The Mid-Continent Investment Company, considers the
757 sale of the Mercoid Type 115-W Immersatherm contributes to the infringement of the above patent, has been carefully considered.

"The said Cross patent refers to a particular type of fluid operated thermostat 31 which is of an entirely different construction from our immersatherm or Boiler Control. As the Mercoid Boiler Control has been on the market for many years prior to the filing date of the Cross patent, we fail to see how we are contributing to the infringement of this patent in the event that a purchaser of our control uses the instrument in a manner which you consider to be an infringement of this patent, and we, therefore, deny that we are contributorally infringing the said Cross patent No. 1,758,147.

"Your very truly,

"The Mercoid Corporation,"

by myself.

Q. Where did this correspondence come from?

A. It came from our files.

Q. And has been in your custody ever since?

A. Our general custody, yes.

Mr. Moore: Photostats of Mid-Continent Invest-
758 ment letter dated November 24, 1939; Mid-Continent Investment Company letter of February 5th, 1940; carbon of letter of August 1, 1940, to Mr. Richard Spencer; Spencer, Marzall, Johnston & Cook letter dated August 1, 1940; Spencer, Marzall, Johnston & Cook letter dated August 27, 1940, and carbon of letter dated September 4, 1940, addressed to Spencer, Marzall, Johnston & Cook, are offered in evidence as DEFENDANT'S EXHIBIT RR.

Mr. Bair: Mr. Moore, am I correct? Did I catch the fact that the letter of August 27 related to another patent and not the patent in suit?

Mr. Moore: That related to a charge of infringement, Mercoid Control Type 115-W Immersatherm.

Mr. Stone: And that patent is not in suit here?

Mr. Bair: What patent was referred to, this patent or another patent?

Mr. Moore: It was the companion Cross patent which is referred to in the exclusive license of Minneapolis-Honeywell.

Mr. Stone: But to avoid confusion, though, that is not in issue in this case?

Mr. Moore: No.

Q. Did you receive a proposed license from Mid-Continent Investment Company under this Cross patent as 759 referred to in this correspondence?

A. Yes.

Q. Can you produce it?

A. Yes, sir.

Q. Have you read this proposed license from the Mid-Continent Investment Company to The Mercoid Corporation?

A. Yes, I have.

Q. And are you thoroughly familiar with its contents?

A. Well, I would want to refer to the document itself in any discussion of it, but, yes, I know something of the terms of it.

Q. Will you please read the paragraph entitled, "License," beginning on line 2 from the bottom of the first page?

A. "Mid-Continent hereby grants to Mercoid a non-exclusive non-assignable license under the said Patent No. 1,758,146, and reissues thereof, to practice throughout the United States of America, its territories and dependencies, the invention described as claimed in said patent. In any reissue thereof to make, use and or sell throughout the United States of America, its territories and dependencies, products or articles for use in heating systems or 760 plants of the type described and claimed in said patent, and any reissues thereof, no right to sub-license is given."

Q. Will you please read the paragraph under the heading, "Royalty"?

A. "Mercoid agrees to pay Mid-Continent One Dollar as royalty for every Stoker Control sold by Mercoid and employed in such a way as to come within the terms of the patent herein licensed."

Q. Now, will you please read the paragraph under "Past Infringement."

A. "Mercoid shall pay to Mid-Continent on the date that this agreement is entered into the sum of $5000.00 as royalty for past infringement of the said United States Patent No. 1,758,146, prior to taking effect of this agree-

ment, and Mercoid shall thereby be released from any and all liability for past infringement of said patent."

Mr. Moore: Photostat of the agreement proposed by Mid-Continent Investment Company to Mercoid Corporation just produced by the witness is offered in evidence as DEFENDANT'S EXHIBIT SS.

(The exhibit was so marked.)

Q. Mid-Continent Investment Company has introduced in its pleadings a copy of the license agreement of December 31, 1938, I believe that is Plaintiff's Exhibit 6, between Mid-Continent and Minneapolis under the Cross patent, and also the earlier agreement between Minneapolis and the owners of the Cross patent. Have you read those two agreements?

A. I have.

Q. One of them has been introduced as Plaintiff's Exhibit 6, and the other as Plaintiff's Exhibit 7.

Mr. Freeman: They are attached to the pleadings by exhibit number. They have not been offered in evidence as yet.

Mr. Moore: I believe Mr. Stone did offer them in evidence. Did you not, Mr. Stone.

Mr. Stone: Oh, yes.

Mr. Moore: In his direct case. They are in evidence.

Q. I ask you now to refer to the license agreement proposed by Minneapolis-Honeywell to The Mercoid during the year 1935. That is Exhibit QQ. I will call your attention to the first "Whereas" clause on page 1. Now, referred to Plaintiff's Exhibit 6, do you find the Cross patents in both instruments the same?

A. Yes.

762 Q. Will you please read the first "Whereas" clause on page 2 of the proposed license, Exhibit QQ?

A. "Whereas, said Cross-Butler-Minneapolis agreement of December 23rd"—

Q. No, no, the first "Whereas" on page 2.

Mr. Freeman: Mr. Moore, if you are trying to point out differences why not ask him what the differences are and we may save some time.

Mr. Moore: That is what I am trying to do.

Mr. Freeman: That is what I thought you were trying to do.

The Court: I do not know what you are trying to get

at by way of answer to this question. Please ask him a direct question.

Mr. Moore: I am trying, your Honor, to show what is included and the differences included in this proposed license and the original license.

The Court: Why don't you ask him that direct question?

Mr. Moore: Q. You have read both of those?

A. Yes.

Q. Do you know the differences, if any, or the additions in the license proposed to the Mercoid Corporation that were not contained in the license granted to Minne-
763 apolis-Honeywell?

A. I may miss some of the differences. There is a difference in the item of royalty, for one thing. I will list that.

Q. Are the patents the same in both cases?

A. The patents are exactly the same in both cases.

Q. Are there any additional patents mentioned in the proposed license to Mercoid?

A. Yes, there are. There is a Shipley patent mentioned, and there is also a David J. Jones patent.

Mr. Freeman: I thought he said the patents were the same.

Mr. Moore: No, that was in the two licenses.

The Court: He asked the direct question, were the two patents in the first "Whereas" clause the same.

Mr. Moore: That includes the two Cross patents.

The Court: So far as the Cross patents are concerned, as I understand it, the agreement is the same. So far as The Mercoid royalty is concerned, there are two additional patents. We have got that clause. Let us get to an answer of this question.

The Witness: A. Of course, one is a non-exclusive license, and the other is an exclusive license. Now, to get all the differences, I have to go through each one
764 of them clause by clause, because I have not the two licenses committed to memory.

The Court: Point out the differences in the two licenses.

Mr. Moore: Q. Is there a definition in the term "Combustion Stoker Switch" in the license submitted to The Mercoid?

A. There is.

Q. And you do not find that in the original exclusive license granted to Minneapolis?

A. No, I do not.

Q. Both licenses require the payment of an earned royalty on the combustion stoker switch, do they not?

A. That is correct.

Q. I show you here a letter from Minneapolis-Honeywell, and it is an original copy, addressed to Mr. Langdon Moore, which was admitted or introduced by Minneapolis-Honeywell in some of the pleadings, at least the carbon of this letter was, and I ask you to read the third paragraph.

A. This letter is dated December 2nd, 1935.

"Basically both the Jones patent and the Shipley application have to do only with stoker controls, and the feature known as the 'Outfire' control. You, of coursse,
765 have or are obtaining copy of the Jones file. The Shipley patent has not as yet been issued, and in fact, at the present time there are two applications pending on the Shipley file, one devoted to the switching mechanism and the other to the system. The Shipley patent has also run into some interferences, and we have been buying up the patents of the other parties, so that the whole situation in reference to the Skipley patent at the present time is rather a mess."

Q. Now, will you read the following paragraph.

A. "From our point of view, we cannot very well send you all of this material, but if you feel that it is of enough importance to you to come up here, our patent department will be glad to go over enough of this with you so that you can see the structure and the general situation and decide whether or not you want the Shipley application included in the license, or would prefer to have it out."

Q. Will you please read the paragraph which is the last paragraph on page 1 of the letter.

A. "Our situation works out about as follows:
766 We have included in the license the Shipley patent with the thought that if eventually the broad claims went into some of the other patents which we have purchased, we would, of course, carry these claims over for the benefit of the licensee. At the same time until the applications whipped into final shape, we do not know what the exact situation may be, and there is structural detail and other matter included in some of the applica-

tions which the licensee may not be entitled to a license on."

Mr. Moore: Photostat of the letter of December 2nd, 1935, just referred to by the witness is offered in evidence as DEFENDANT'S EXHIBIT TT.

(The exhibit was so marked.)

Q. I believe that Minneapolis Honeywell Regulator Company has specified in its pleadings the number of patents which were involved in the interference with the Shipley applications that was purchased by Minneapolis-Honeywell, as stated in the part of the letter you just read. The patents enumerated by Minneapolis-Honeywell are: Shipley patent No. 2,063,898—

The Court: May I inquire; what is the reason for
767 all this? I take it you are going to argue this case sometime, and I cannot quite get through my head why you introduce a letter and then have the witness read part of it. What is the reason?

Mr. Moore: The reason is I am going to ask him if he can produce copies of these patents which he has referred to.

The Court: First you ask him to read a part of a letter and then you introduce the letter. Maybe I do not understand how to try patent suits, but I cannot understand the reason for taking up all that time.

Mr. Freeman: The pleadings state the patent numbers.

Mr. Moore: Well, I would like to introduce then copies of the patents stated in the pleadings as being involved in this interference on the Shipley application.

Soft copies of the Shipley patent No. 2,063,898, Shipley patent No. 2,117,514, Brownell patent No. 2,064,193, Burton patent No. 2,064,194, and Benjamin patent No. 2,109,939 are offered in evidence as DEFENDANT'S EXHIBIT UU.

(The exhibits were so marked.)

Mr. Moore: Q. Minneapolis-Honeywell has produced
768 a copy of the sub-license agreement of July 19, 1933, between Minneapolis-Honeywell and Detroit Lubricator Company, and I ask you if you have seen this agreement.

A. Yes, I have.

Q. Have you read it over carefully?

A. I have read it. It is quite a long agreement.

Q. Have you compared it with the agreement proposed

by Minneapolis-Honeywell to Mercoid, in Mercoid Exhibit WW?

The Court: Mr. Moore, are you going to introduce this in evidence?

Mr. Freeman: It is already in evidence.

Mr. Stone: It is already in evidence.

Mr. Moore: It has not been introduced.

The Court: Are you going to introduce it?

Mr. Moore: Yes.

The Court: Then let's introduce it, and then we will point out any differences. For the life of me, I cannot see why you ask the witness to read parts of it, and then introduce it.

Mr. Moore: A photostat of the sub-license agreement of July 19, 1933, between Minneapolis-Honeywell and Detroit Lubricator is offered in evidence as DEFENDANT'S EXHIBIT VV.

769 (The exhibit was so marked.)

Mr. Moore: Minneapolis-Honeywell has produced a copy of an agreement between it and the Penn Electric Switch Company relating to the application of the Jones patent for control systems for stoker motors and the application of Russell W. Stem for heating furnace control, which became the Stem patent No. 1,882,341, referred to in the first "Whereas" clause on page 2 of the agreement Defendant's Exhibit VV.

Mr. Bair: Now, which is VV?

Mr. Moore: VV?

Mr. Bair: Is that the Detroit Lubricator?

Mr. Moore: Yes.

A photostat of this agreement as furnished by Minneapolis-Honeywell in its pleadings is offered in evidence as DEFENDANT'S EXHIBIT WW.

(The exhibit was so marked.)

Mr. Moore: You may take the witness.

The Court: We will take a recess until 2:00 o'clock.

Whereupon a recess was taken until 2:00 o'clock P. M.

770 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company, *vs.* The Mercoid Corporation. } Before Igoe, J.

Tuesday, September 16, 1941,
2:00 o'clock p. m.

Met pursuant to recess.

Present:

Messrs. Stone, Bair, Freeman, Moore.

The Court: You may proceed.

Mr. Freeman: May it please the Court, we had planned on having Mr. H. W. Sweatt, the president of Minneapolis-Honeywell Regulator Company, arrive here this morning. He left Minneapolis last night. I got a wire from him this morning that his train is five hours late, the wire being sent from Marquette, Iowa, and he said he would be here about 2:00 o'clock our time today. I now have another telegram from Savanna, Illinois, showing he hasn't progressed very far—I will read the telegram to you, your Honor:

"On Blackhawk, Burlington On account washouts
771 now can't arrive before four or five at best. Will phone office or go Blackstone H. W. Sweatt."

He may be around here about 3:30 or 4:00 o'clock this afternoon. I wanted the Court to know that if in case we may be short a witness about that time.

The Court: Is this your last witness?

Mr. Moore: Yes, your Honor.

The Court: If you come to a point where you haven't any witness we will just take a recess.

Mr. Freeman: I want your Honor to know about it.

The Court: You feel it will take all day tomorrow?

Mr. Freeman: Oh, no. And so far as Mr. Sweatt is concerned we should not be more than half an hour on direct.

The Court: All right.

HUGH COURTEOL, a witness called on behalf of the defendant The Mercoid Corporation, having been heretofore duly sworn, resumed the stand and testified further as follows:

*Cross-Examination by Mr. Freeman.*

772 Q. Mr. Courteol, you came with Mercoid in March or February of 1938?

A. Well, I believe the election, the corporate election, was made in February. Whereupon, I returned to the East and then came out and officially assumed my duties the early part of March.

Q. As to any of the acts prior to March, 1938, on the part of The Mercoid Corporation, about which you testified this morning, you do not know of those acts of your own personal knowledge?

A. Well, that is debatable, of course, but you must remember I have gone into the files and studied as many of the angles about the litigation and other important situations in Mercoid. I have had to dig into the files and find out where we stood as a corporation on those matters and, obviously, litigation was one very important one.

Q. As to any of the matters to which you testified this morning with respect to acts occurring prior to March, 1938, you learned of such acts subsequent to your becoming the president of the company in March, 1938?

A. Well, yes. The answer to that must be yes.

Q. Now, you mentioned competitors of Mercoid at
773 the time you became president in March, 1938, as comprising Minneapolis-Honeywell, one of the plaintiffs here, and Penn Electric Switch Company. Had you at that time heard of the Detroit Lubricator Company, Detroit, Michigan?

A. Yes; they were a competitor.

Q. And had you at that time heard of the Russell Electric Company?

A. Russell Electric Company, I couldn't discuss so well. In fact, if my record is correct on that, on this hearsay you talk about, Russell was out of business.

Q. In March, 1938?

A. In March, 1938, it is my understanding that they had folded up.

I would like to make this qualifying statement in refer-

ence to this general subject, that while I did say Minneapolis-Honeywell was our largest competitor, and another one was the Penn Switch, I didn't comprehend or attempt to comprehend all of our competition in my statement.

Q. I would like to have you tell us all the companies you knew of at the time you became president who were Mercoid's competition or Mercoid's competitors.

774 Would you like a little help?

A. Sir?

Q. Would you like a little help as to the names?

A. No, I don't need any help at all. Minneapolis-Honeywell was doing at that time about ten times the volume of what Mercoid Corporation did, consequently I listed them as the dominative competition. Penn Electric Switch was somewhat in our own same category; in other words, their volume tended to run along somewhere near ours. Detroit Lubricator was in the control manufacturing business, although not an important factor in the same sense as, well, in the same sense as we believed ours, Penn and Minneapolis to be.

There were other competitors, I presume, but certainly I heard so little of them at that time that in my mind there were three or four people in the electrical automatic control field.

Q. Had you heard of the Perfex Control Company of Milwaukee, Wisconsin?

A. Perfex was a coming-up factor in the business at that time, yes.

Q. Had you heard of White-Rodgers of St. Louis?

A. No.

Q. Do you know of the White Rodgers Company at

775 the present time?

A. I know of them today. I didn't know of them at that time.

Q. Do you know whether or not they were in business in March, 1938?

A. I couldn't tell you.

Q. Had you heard of the Cook Electric Company of Chicago?

A. Well, I had not heard of the Cook Electric Company, no. I did not hear of the Cook Electric Company for quite a long while after I came with The Mercoid Corporation. They were scarcely our competition, building a few items, I have since ascertained, but of no competition factor in

the field that would lead us to set them up as outright competition.

Q. Were you familiar with the stoker control made by the Industrial Engineering Company of Evansville, Indiana?

A. I was not.

Q. Were you familiar with the stoker time control made by Teeple Control Company?

A. No.

Q. Were you familiar with the control used by Iron Fireman, manufacturer of stokers?

776 A. No, I was not.

Q. Were you familiar with the control used by Sears, Roebuck & Company on its stokers?

A. Yes; I knew they were using a timer which they had manufactured for them by another company in which they were interested.

Q. That company is the Sampsell Time Controls Company?

A. Sampsell Time Controls Company.

Q. Were you acquainted with the Paragon Clock Company, manufacturer of stoker timers?

A. No, I wasn't.

Q. Are you familiar with that company now?

A. I have heard of them since.

Q. Now, you mentioned the Penn Company as being comparable to your company. Were you talking about sales volume or were you talking about the manufacturing and sale of stoker controls in making that comparison?

A. No; I simply had reference to the volume which in the hearsay of the trade they were doing and it seemed to run along somewhere near our own.

Q. I am asking you whether that was in volume of dollar sales or number of stoker controls.

A. No; I would say dollar sales.

Q. Without regard to the unit?

777 A. I would not know about the units they sold.

Q. Were you including when you made that comparison all of the various controls made and sold by the company?

A. You mean Penn?

Q. Yes. In other words, were you including—

A. I made a statement I was considering the dollar volume.

Q. I am asking you whether that dollar volume included

only stoker controls or included the forty or fifty other items made by the Penn Company?

A. It would include all the business they did.

Q. That would include air conditioning controls, refrigerating controls, air pressure controls, air volume controls and many other controls?

A. Certainly.

Q. So, in making your comparison about the size of the company you were talking about dollar volume as distinguished from sale of stoker controls that are here involved?

A. That is correct.

Mr. Freeman: That is all.

The Court: Mr. Stone, do you have any questions?

Mr. Stone: Yes, sir.

778 *Cross-Examination by Mr. Stone.*

Q. In the direct examination, Mr. Courteol, you stated the TJV was being made in 1938 when you came with the company, whereas I believe Mr. Owens and Mr. Schultz have said you were making it in 1936.

A. I think Mr. Owens and Mr. Schultz were correct. We possibly had certain remaining parts and possibly an assembly on hand. I don't know but that you are right.

Q. In the course of your direct examination you read Defendant's Exhibit RR and apparently either you or your counsel made some point of the fact that the costs in the Smith case were paid by Mercoid Corporation and that apparently we were attempting to ask you to pay them twice when we asked you for a certain sum of money. You do not know, do you, whether or not Mr. Walter M. Cross when he made that statement referred to other expenses such as unallowable court costs and expenses?

A. Will you read the passage?

Q. "Another point which I believe germane to your consideration of our proposal is that the $4000.00 mentioned as our costs in Smith case did not include any
779 court costs and that such expenses amounted to approximately another Thousand Dollars."

A. What am I to conclude from that?

Q. I am asking you whether you know—

A. I am making the point that is all I had there, was his plain statement. He identified it as court costs and qualified it in no way.

Q. All right. Let's go into the sum of the $4000.00. How was that sum reached?

A. Well, I don't know.

Q. Did you or anybody else at The Mercoid Corporation ever tell Mr. Cross approximately the number of controls of M-61 type you thought you had manufactured up to the time of this—

Mr. Moore: I object to that question.

Mr. Stone: I don't know why there should be any question about it.

Mr. Moore: The witness on the direct examination did not make any statement as to the number of controls made, sold or given to anybody.

Mr. Stone: They attempted to use this fixed sum of money in the licensing agreement.

780 The Court: He may answer that question if he can.

A. I have no objection to answering that question. I am sure that there was some discussion between Mr. Cross and the principals of our company with reference to the probable number of infringed or alleged infringed devices.

Mr. Stone: Q. And it was on the basis of that number—

A. I don't know. That is, I mean—

Q. All right. But you did give us the number. Do you recall the number?

A. I don't recall the number, no.

Q. Mr. Courteol, in Defendant's Exhibit RR there are several letters, each of which you have discussed. Does this represent the complete correspondence between the various parties to this correspondence?

A. Well, it runs in my mind to the best of my knowledge it does comprise the correspondence. There might be some other correspondence and I would be glad to identify some other correspondence if it develops there is.

Q. I am not asking you to identify the correspondence. I would like you to explain what this language might mean. This language is written by your attorney to us in a letter dated July 18, 1940:

781 "Inasmuch as you state that Mid-Continent would not accept royalties on Type M-51 where that type is employed for purposes of controlling the temperature of the furnace casing but if this type M-51 were to be employed for purposes of fire maintenance, then it would also come within the purview of the Cross patent and provided

for settlement by arbitration, my client feels it should be able to consider the exact wording of such an agreement before it advises Mid-Continent definitely whether or not a settlement will be agreeable to Merçoid."

What does that language mean to you?

A. Well, I can't tell you, to be perfectly frank, all that might be in Mr. Moore's mind in writing that letter. He obviously has certain thoughts in his own mind looking toward our protection that I might not be party to. I assume he intended to make it very clear to himself and to us that these controls that we shipped all over the country for use on many varied applications that there should be some definition more clear than we had at that time as to what was involved in this agreement or what would be involved in the agreement.

Q. Now, was this letter written subsequently to a
782 meeting between you and Mr. Spencer and perhaps Mr. Moore in which it was tentatively understood we were going to proceed on a licensing agreement?

A. I never met Mr. Spencer personally in my life.

Q. You do not know whether or not there was such an understanding between Mr. Moore and Mr. Spencer?

A. There was a conference, I believe there was a conference or there may have been more than once conference between Mr. Moore and Mr. Spencer, but I was not a party to any of those conferences and therefore I can't answer your question.

Q. After we had received this letter I believe we submitted a license agreement to Mr. Moore, is that correct?

A. Yes, you did.

Q. And he submitted it to you, is that correct?

A. That is correct.

Q. And then everything fell through, is that correct?

A. Well, consideration was given the license agreement.

Q. Immediately after we submitted the license agreement you turned it down; is that correct?

A. We wrote a letter and said—well, the letter is in evidence.

783 Q. That is right. In the course of those negotiations during the year 1940 was it your understanding any license which would be granted would come from Minneapolis-Honeywell originally?

A. State that question again, please.

Mr. Stone: Read the question, please.

(Question read.)

A. Well, I don't know I could answer that question. I don't know what thought I gave it at the time. I do know this, that in Mr. Moore's suggesting that a proposed license be gotten from the Mid-Continent, they were representing to us, that is, the Mid-Continent people, that they now had a right, in fact, it was being pressed at them by their licensor to get The Mercoid Corporation lined up, that they had no choice in the matter other than force us to take a license, whereupon the atmosphere did undergo some change from what it had been theretofore. We had that representation from Mr. Cross during our conference. Therefore, we wanted to see just for our own information, if nothing else, what the color of this new arrangement would be, and it seemed to be a proper approach to see what kind of license you people were now going to submit to us.

Q. You had no intention of entering into a license
784 agreement at any time?

A. I will not say that for this reason, it has always been a policy of mine to avoid litigation where litigation can be avoided. We have admitted, I believe, in our correspondence that this case did have a nuisance value and it is a matter of record, at least I don't mind its being a matter of record, that I sat and conferred with Mr. Cross on the possibility of winding this thing up and not having to spend our time and the Court's time litigating the question.

Q. Then what are all these proceedings and all these letters about?

A. Simply that when the case was finally set up to us it was accompanied by many other things of which there has been a record made here today. For one thing, another letter reached us shortly after the submission of this license, and our letter in response thereto, bringing up another patent.

Q. That is right. I wrote that letter.

A. May I finish?

Q. That has nothing to do with this situation. I am asking you to answer my question,—what are all these letters about, all these letters I have, all these letters you have put in, and all this conversation you said took
785 place in 1940?

Mr. Moore: May it please your Honor, I would like to object to this question. The letters speak for themselves.

The Court: The objection is overruled. He may answer if he can.

A. Well, I think I answered the question when I made my statement. If I didn't get the question correct, state it again and I will try to give you an answer.

Mr. Stone: Read the question, please.

(Question read as above recorded.)

A. Well, they are about the case of Mid-Continent Investment Company *vs.* The Mercoid Corporation.

Mr. Stone: Q. And what precipitated all this?

A. What precipitated all this?

Q. Yes.

A. Our refusal to take a license which we did not think was equitable on its face, and in connection with all the other matters which had transpired at the time which made us withdraw any intent or any thought we had of entering into an agreement.

Q. And was this all subsequent to the coming down of the mandate in the Circuit Court of Appeals for the Eighth Circuit?

786 A. Well, I—

Q. Answer the question.

A. State it again.

Q. Was all this subsequent to the coming down of the mandate from the Circuit Court of Appeals for the Eighth Circuit?

A. Why, certainly.

Q. These are all negotiations relating to whether or not The Mercoid Corporation is responsible as contributory infringer to the Cross patent, isn't that correct?

A. State that again.

787 Mr. Stone: Read the question, please.

(The question was read by the reporter as above recorded.)

A. No, I would not admit that.

Mr. Stone: Q. All right. Do you know any—

A. I mean, you are asking me to say we were a contributing infringer and that certainly was not an established fact, but at the time the license—

Q. I will be glad to change the word to charge of contributory infringer. Is that what these negotiations were about?

A. I would admit that, I think.

Q. Do you know of any acts of Mid-Continent during

the year 1940 directed toward anybody except The Mercoid Corporation in regard to the Cross patent?

A. I would not know.

Q. You don't know?

A. I don't know, no.

Q. Do you know of any act in the year 1939?

A. I don't know. I mean nothing came within my knowledge.

Q. The only thing you do know is the plaintiff Mid-Continent conducted certain negotiations with you which matured as a fact subsequent to the decision of the 788 Circuit Court of Appeals of the Eighth Circuit?

A. That is correct.

Mr. Stone: The plaintiff Mid-Continent offers in evidence as Plaintiff's Exhibit 31 a copy of a letter on the stationery of Richard Spencer, dated July 15th, addressed to Mr. Langdon Moore. Do you admit receiving the original of that letter, Mr. Moore?

Mr. Moore: I presume I did. I would have to check with my records, but I have a recollection of a letter somewhat similar to this that did come in. Can you testify that was sent from your office?

Mr. Stone: Yes, I will testify that was sent from my office. However, I am not under oath.

(The exhibit was so marked.)

Mr. Stone: As Plaintiff's Exhibit No. 32 Mid-Continent offers a copy of a letter on the letterhead of Langdon Moore dated July 16th addressed to Mr. Richard Spencer.

Mr. Moore: I will admit that is on my letterhead. It has my signature to the letter.

(The exhibit was so marked.)

Mr. Stone: As Plaintiff's Exhibit No. 33 Mid-Continent offers a carbon of a letter written on the letterhead of Richard Spencer dated July 17th and addressed to Mr. Langdon Moore. Did you receive that letter, Mr. Moore?

789 Mr. Moore: I would have to check that with my records. The answer is the same as in regard to the other carbon copy. If you will state that was sent from your office I will raise no objection.

Mr. Stone: I do so state.

(The exhibit was so marked.)

Mr. Stone: Plaintiff's Exhibit No. 34 Mid-Continent offers a copy of a letter on the letterhead of Langdon Moore, addressed to Richard Spencer, dated July 18,

1940. As a matter of fact, they have been admitted. These are copies. I don't know what happened to the originals.

Mr. Moore: This letter is written on my letterhead and my signature to the letter.

Mr. Freeman: And written as counsel for The Mercoid Corporation and in its behalf?

Mr. Moore: Well, I don't know. I would have to read the letters.

Mr. Freeman: Well, read it. It so states.

Mr. Moore: The first letter of July 16th relates to The Mercoid Corporation. Therefore, I would be acting on behalf of The Mercoid Corporation.

This second letter on my letterhead relates to the license submitted by Mr. Spencer to me to be considered by The Mercoid Corporation, and in that event I was acting in behalf of The Mercoid Corporation.

790

Mr. Stone: As Plaintiff's Exhibit No. 35 the plaintiff Mid-Continent offers a letter on the letterhead of Langdon Moore, addressed to Richard Spencer, dated July 24, 1940.

Mr. Moore: This is a letter on my letterhead thanking Mr. Spencer for his letter of July 23, 1940, and is signed by me.

(The exhibit was so marked.)

Mr. Stone: Did you write all of these letters, Mr. Moore, in behalf of Mercoid Corporation?

Mr. Moore: I believe they are all entitled Mercoid *vs.* Mid-Continent. They speak for themselves.

Mr. Stone: You had the authority of the company?

Mr. Moore: I generally put the proposition up to the company before I answered the letter and got their authority before replying.

Mr. Stone: Q. Now, you stated a few minutes ago, Mr. Courteol, that Mid-Continent asked, or M-H asked you to deal directly with Mid-Continent. Now, which was it?

A. No, I didn't make that statement. I didn't make that statement.

Q. You didn't say either one of those came to you?

791

A. No. I made the statement Mr. Cross said he was being pressed by his licensor to conclude the agreement with The Mercoid Corporation.

The Court: Q. His licensor?

A. His licensee.

Mr. Stone: Q. You say Mr. Cross said that to you?

A. That is correct.

Q. Did he write that in any of these letters?

A. Sir?

Q. Did he write that in any of these letters?

A. No, not that I recall.

Q. You knew there was an exclusive license agreement between Mid-Continent and Minneapolis-Honeywell, did you not?

A. Yes, we had reason—I had reason to believe there was from the previous licenses—

Q. Well, that is enough. Didn't you understand that Mr. Cross had to go to Minneapolis-Honeywell to get them to permit him to execute a license such as the one that was offered in July or August?

A. No, of course I didn't know what arrangements they might have had between them. That is, I didn't know definitely: He was making certain representations and we thought it was a proper thing for us to find out
792 what the Mid-Continent Company had in mind for the Mercoid Corporation at this time. I mean it was perfectly proper to ask them what proposition they had in their mind.

Q. As a matter of fact, back in 1935 when this suit was instituted did the Mercoid Corporation ask for offers of settlement at that time?

A. I don't know.

Mr. Moore: I object, your Honor. The witness has testified—

Mr. Stone: He has answered.

Mr. Moore: (Continuing.) —he knew nothing about anything that occurred before he entered The Mercoid Corporation in 1938.

Mr. Stone: Q. During the entire course of the litigation in Kansas City, do you know whether or not there had been other offers of that sort?

A. Offers, or requests?

Q. Or inquiries, anything you care to describe them as?

A. I can't make this statement with too great authority but my understanding is that there has not been any attempt on the part of The Mercoid Corporation to settle the relationship between them and the Mid-Continent.
793 Q. Then, they were pursuing a different policy with respect to the Cross patent than they pursued at other times, to try to avoid litigation, is that it?

A. I don't know what you mean by that question.

Q. It has to be one or the other. After all you either were litigating the thing down there or not. Either you

are trying to settle the thing or not. I am trying to find out which you did.

A. I did make an attempt to settle this situation with Mr. Cross.

Q. When?

A. In the early part of 1940.

Q. Oh, that is understood.

A. Well, I mean, you are asking me what I did and what I have knowledge of so I can testify.

Q. Do you know of any in 1938 or 1939?

A. No, I do not. I for one hate to have litigation hanging over—the prospect of litigation hanging over the heads of our company, and this was one of the things I did make some attempt to clear up. Unfortunately, nothing came of it. It got more and more complicated as I got into it. There were more and more demands and requests for recognition of the validity until the thing finally came to
794 the point where anyone that had his company's interest at heart would say, "No, we just can't go any further on this. Let us have it out."

Q. All of these demands we made upon you appear in the written documents now in the case?

A. Well, together with letters we read, yes.

Q. Defendant's Exhibit PP seems to be correspondence between, or rather with Mr. McCabe of the Mercoid Corporation. What is the relationship of Mr. McCabe to The Mercoid Corporation?

A. I stated that this morning.

Q. Is he a stockholder in The Mercoid Corporation?

A. Yes, he is.

Q. Is he a substantial one?

A. Yes, he is. He isn't the controlling stockholder. He is a substantial stockholder.

Q. Does the net effect of his stock interests plus his contracts give him substantial control of the corporation?

A. I would say that he did have a very important control in the corporation, but I wouldn't say the majority control. You say substantial. Yes, it is very substantial.

Q. And he is the one who owns all the patents under which you operate?

795 A. Well, I would say certainly the bulk of them, because he either owns them or he has approved our sale, our manufacture and sale of products under other patents.

Q. Does he approve what you take a license under?

A. Oh, certainly.

Q. What percentage of the Mercoid business is protected by patents?

A. I don't know.

Q. How many patents are you licensed under?

A. Well, here is the point, if I may qualify the other remark. We manufacture some devices which today are in a real sense public property. I mean there are nothing patentable on. I am not qualified—

Q. I didn't ask that question. I am asking you what percentage of your products that are found in—let us say your exhibit, Defendant's Exhibit—

A. I will answer that question in this way—

Q. Or in your current catalog—

A. I will answer the question in this way. I can't answer it accurately for obvious reasons, but I will say a very large percentage of the product we sell is covered by a patent.

Q. Practically every control you sell carries a pat-
796 ent number on it?

A. Well, I don't know. You can take the control companies' catalogs today and take a catalog of a competitor and I suppose you would find a great many controls in there that were practically common to each company.

Q. Isn't The Mercoid Corporation built on patented devices?

A. Well, I think patents in our case are an incidental, and I would say an important incidental, but Mercoid's position today is built on its type of manufacture and the acceptance that has been developed for it over a great many years. Take the case of our Mercury switch. We build a Mercury switch today that is,—as far as patent protection is concerned, there is a minimum of protection, and yet the switch has been built and recognized in the trade as something peculiarly Mercoid, and as such enjoys great good will.

Q. Isn't Mr. McCabe the true founder of Mercoid Corporation?

A. Well, The Mercoid Corporation wasn't founded until 1928.

Q. All right. Well, as I understood it, all that you did was change your names, as one of the witnesses said?

A. No, Mr. McCabe was not the founder of the
797 predecessor company. He wasn't even in the picture, if I know my history of the company, until some years

afterwards. You are talking about the Federal Gauge Company as a company name.

Mr. Stone: I apologize, your Honor: I can't find the exhibit here. All right, let it go. That is all for me.

Mr. Moore: Mr. Courteol, I would like to ask one question before you leave the stand.

*Redirect Examination by Mr. Moore.*

Q. Mr. Courteol, there has been a lot of discussion about settlement between Mercoid and Mid-Continent Investment Company. Do you know who started that offer of settling? I call your attention to Exhibit RR here.

A. Well, I have testified my first knowledge of this situation, the threat of a suit, was the letter of November 24th, and this paragraph here: "It now having been adjudicated that our patent is valid, and that you have infringed the same, before the institution of an action for damages we are writing to inquire as to whether you desire to discuss with us the question of the settlement of damages."

798 Mr. Moore: That is all.

The Court: Is that all?

*Recross Examination by Mr. Stone.*

Q. Did Mercoid have such a discussion?

A. Yes.

Mr. Stone: That is all.

Mr. Moore: May it please the court, this concludes the defense for The Mercoid Corporation, but before the defense is closed I want it to be understood that all exhibits which have been identified or referred to, which have not been offered in evidence, will be considered as having been offered in evidence, under their identification number. Is that correct?

Mr. Stone: Yes.

The Court: That applies to both parties.

Mr. Stone: Yes, it should.

The Court: That will apply to both parties.

Mr. Moore: All parties, all of us.

Mr. Stone: If the court please, this delay which has occurred as a result of the Minneapolis-Honeywell witness being unable to hear has given a little extra time here. I

did not expect to get on with my rebuttal today. If we can have an understanding that I can recall Mr. Cross tomorrow some time—I partly prepared my rebuttal—I will be very glad to put him on the stand now.

The Court: Could you finish with him if you put him on tomorrow?

Mr. Stone: I think I could.

The Court: Then, we could recess until tomorrow morning.

Mr. Stone: I believe I will be able to finish by noon.

The Court: If you think you can finish tomorrow we will adjourn now until 10:30 tomorrow morning. That will be better and you will be able to go ahead with your rebuttal.

Mr. Moore: Before you adjourn court, if your Honor please—

The Court: I believe this exhibit belongs to Mr. Stone.

Mr. Moore: Yes, it is one of Mr. Stone's.

Before you adjourn this case and before you leave the court room, I would like to ask to admit to practice before this court for this case only my assistant, L. Kerans Moore. She has been admitted to practice before the Supreme Court of the State of Oklahoma and also the Court of Appeals for this Circuit. So she is properly qualified and she will be with me on the briefs.

The Court: Do you certify her to be a person of good moral character?

Mr. Moore: I do, your Honor.

The Court: Yes, for this case.

We will see you all tomorrow morning at 10:30.

Whereupon an adjournment was taken to Wednesday, September 17, 1941, at 10:30 o'clock a. m.

801 Mid-Continent Investment Company, a corporation, and Minneapolis-Honeywell Regulator Company,
*vs.*
The Mercoid Corporation.
} Before Igoe, J.

Wednesday, September 17, 1941.
10:30 o'clock a. m.

Met pursuant to adjournment.

Present:

Messrs. Stone, Blair, Freeman, Moore.

Mr. Moore: May is please your Honor, yesterday Mr. Freeman asked if we could furnish a breakdown of the figures in our bulletin, or rather our exhibit OO, and I now have the figures brown down in accordance with his wishes. (Handing document to counsel.)

And I wish to offer this statement of Mr. Chambliss as DEFENDANT'S EXHIBIT XX.

(The exhibit was so marked.)

Mr. Freeman: Mr. Sweatt, will you take the stand, please?

802 Mr. Moore: Before Mr. Sweatt takes the stand, the usual procedure I believe would be for the plaintiff Mid-Continent to present its rebuttal to the charge to our answer in regard to the non-infringement of the patent, and then both the willing plaintiff and the unwilling plaintiff present their evidence in opposition to the charge of conspiracy. Now, Mr. Sweatt is not interested in the first part, is he, or not?

Mr. Freeman: What Mr. Sweatt is interested in I do not know. I do know if we can have Mr. Sweatt testify now so he can catch a 1:30 plane, upon which he has a reservation, it would be helpful to Mr. Sweatt. I can't see it makes any difference as to the order of procedure anyway.

Mr. Moore: I will be glad to accommodate Mr. Sweatt.

Mr. Stone: Mr. Moore, in this statement that you have offered here you have included TJV systems and JMV systems as timer controls, is that correct?

Mr. Moore: I presume so. I didn't make it up.

803 HAROLD W. SWEATT, called as a witness on behalf of plaintiff Minneapolis-Honeywell Regulator Company, in rebuttal, having been first duly sworn, testified as follows:

*Direct Examination by Mr. Freeman.*

Q. You are Harold W. Sweatt, president of Minneapolis-Honeywell Regulator Company?

A. I am.

Q. How long have you been associated with the Minneapolis-Honeywell Regulator Company and its predecessor?

A. Since 1911.

Q. What is the nature of the business of Minneapolis-Honeywell Regulator Company?

A. Manufacture of temperature control devices controlling all types of heating plants subject to temperature pressure, also refrigeration and industrial control processes.

Q. When was the company founded, and I have reference to the predecessor of the present company?

A. 1885.

804 Q. Will you explain the method of doing business on the part of the Minneapolis-Honeywell Regulator Company with respect to the domestic heating field?

A. In the domestic heating field we manufacture and sell controls for the control of heating systems using oil, gas or coal for fuel. The majority of our business in this day with the type of automatic heating that is generally used is to sell this equipment through the manufacturer of the heating equipment, such as the oil burner, the stoker, or the gas burner. We also, however, sell controls through the jobber, distributors, and to some extent through dealers.

Q. When did your company begin the manufacture of a stoker control of the type sometimes known as hold fire control?

A. Some time the latter part of 1929 or the early part of 1930.

Q. When did you first learn of the Cross patent in suit?

A. I believe shortly after its issue, which I think was in, I believe, it was in 1930.

Q. How did the Cross patent here in suit affect your business; that is, after becoming acquainted with the Cross patent just what did you do?

805 A. When the Cross patent first came out we conducted a very thorough examination into the merits of the Cross patent, which continued through most of 1930, and decided the patent was a considerable source of trouble to us in the sale of stoker controls as many of the claims were rather broad, some of the claims were rather broad, and we thought it was probably more advantageous to operate under the patent than otherwise, if it could be done on a satisfactory basis.

Q. What did your company do with respect to the Cross patent after you had made your investigation as to the merits of the patent itself?

A. I believe we conducted negotiations with the owners of the Cross patent and some time toward the end of December of 1931 secured a license, exclusive license under the Cross patents.

Q. Did your company grant any licenses to others under your exclusive license under the Cross patent?

A. We did. We granted a license to the Detroit Lubricator Company.

Q. Did your company ever make any efforts or express willingness to grant a license to other companies?

A. We did. Very shortly after we had obtained our license under the Cross patents we offered licenses to
806 Penn Electric Switch Company, and at one time thought they were about ready to take a license, and at various times I believe we offered licenses to The Mercoid Corporation.

Q. Has your company ever refused to grant a license to anyone that made a request?

A. It has not.

Q. I understand you were faced with the problem of infringement of the Cross patent and you decided to take a license and you took that license in December, 1931, is that correct?

A. That is correct.

Q. After taking a license under the Cross patent did your company in any way change or modify its method of doing business?

A. No, we continued our business as we always had.

Q. By taking the license, one hazard, however, of your business was eliminated?

A. That is correct.

Q. Did you proceed to tell your customers you had acquired a license under the Cross patent?

A. We did.

Q. What was the form of your telling the world or at least the stoker trade that you had acquired a license 807 under the Cross patent?

A. I think we sent out a letter in the early part of 1932 outlining the fact we had acquired a license under the Cross patent to a very general list of stoker manufacturers.

Q. Just what was the purpose of sending out the letter to the stoker trade that you had acquired a license under the Cross patent?

A. There had been a great deal of discussion all through the trade as to the situation existing under the Cross patent, it was general talk throughout the trade, and, having secured a license, we wanted the trade to know that situation was cleared up so far as Minneapolis-Honeywell was concerned.

Q. Your company licensed the Detroit Lubricator Company. Is that company still a licensee?

A. It is not.

Q. Do you know whether or not the Detroit Lubricator Company still continues to manufacture hold fire controls?

A. I understand they do not.

Mr. Freeman: Mr. Moore, I am handing you a letter of The Mercoid Corporation, which is a form letter, dated February 26, 1930, and I would like to ask you whether you concede that is a letter put out by The Mercoid Corporation and signed, at least a facsimile signature, of J. W. Owens, vice president of The Mercoid Corporation, who has testified and who is in the court room at the present time?

Mr. Moore: I will concede this is a letter written on the Mercoid stationery, and probably, I would not swear to it, but it looks like Mr. Owens' signature.

Mr. Freeman: Q. Mr. Sweatt, I hand you a letter, just referred to by Mr. Moore, counsel for the defendant, and will ask you to state when this letter came into the possession of the Minneapolis Honeywell Company?

We will identify the letter as M H Exhibit 1.

(The letter was so marked.)

A. This letter came into the possession of the Minneapolis Company on February 28, 1930.

Mr. Freeman: The letter referred to by the witness Sweatt is offered in evidence in behalf of the Minneapolis Honeywell Company as M H EXHIBIT 1.

Mr. Moore: Objection is made to the offer of this letter

in evidence in this case because on the face of it it shows that it refers to a Mercoid M-53 furnace fan, and the last paragraph refers to warm air furnace fan application, and that has not been raised before your Honor, and that has nothing to do with this case and is immaterial and
809 irrevelant.

The Court: What do you say about the exhibit?

Mr. Freeman: Mercoid has referred to the M-53 device not once but dozens of times, your Honor, and this is a letter with respect to what Mercoid told the world when a customer purchased a control from The Mercoid Corporation. I do think it is material.

The Court: Is this the kind of control in issue here?

Mr. Freeman: Mr. Moore says this was the type of control that is involved. In other words, the witness Owens said the type M-61 is a modification of their 51 and of all their other controls. I think it is material and should go in.

The Court: I don't think it is very material, but we will let it go in like a lot of other ones that we have let go in.

(The exhibit was so marked.)

Mr. Freeman: You may cross examine.

Mr. Moore: No cross examination.

Mr. Freeman: You are excused.

The Court: I would like to ask a question.

Q. What does this license agreement authorize you to do?

A. The original license agreement?

Q. Yes, sir. Just in substance.

810 A. Well, it granted us the exclusive license under the Cross patent for this system of stoker control with the right to grant sublicenses to others.

Q. Why do you think you needed that license?

A. We needed that license because we felt as control manufacturers furnishing temperature controls for these automatic heating systems under the combination patent such as this involved, and our customers coming to us, that if we are furnishing the apparatus, we should obtain protection and freedom if they purchase our controls.

Q. The apparatus that you are selling in conjunction with the Cross patent is an apparatus which you were manufacturing before you received such license?

A. No.

Q. A different apparatus?

A. Before we received the license. Before we had this.

Q. In other words, you were manufacturing a temperature control before you received this license agreement?

A. Yes, sir.

Q. And you are still manufacturing the same temperature control with perhaps some variation?

A. We had only put it on the market a very few months before the Cross patent came out.

Q. Independently of the Cross patent?

811. A. Before we knew about the Cross patent.

Q. You are manufacturing that and you are still manufacturing that under some individual patent right,—that particular appliance?

A. There may be other patents. We may have other patents on that specific device.

Q. That is, that particular device is something which you had before you received this license agreement and something which you still have?

A. Yes, sir.

Q. You put that into the Cross patent and when you did that you got into a thing which is a patent system of heating, as I take it?

A. I don't understand.

Q. When you put that particular appliance in conjunction with a system of heating you are operating under the Cross patent?

A. That is correct.

Q. You can sell that to somebody else for some other purpose?

A. It would have no other purpose.

Q. It would have no other purpose? It is just manufactured—

A. For stoker control.

812 Q. For the purpose for which it was manufactured before you ever got the license agreement?

A. For stoker control, the same purpose.

Q. Why did you need a license agreement if you were manufacturing that stoker control and you were authorized? Why did you do it this way?

A. We brought out this device prior to the publication of the Cross patent.

Q. I understand that. You were protected by a patent?

A. No, sir.

Q. You were not?

A. No, not this use of system.

Q. Upon that particular thing you were protected with a patent?

A. I don't think we had any patents at that time. We probably applied for some.

Q. Have you since secured one upon that appliance?

A. I can't answer that question.

Mr. Freeman: Perhaps I can help a little here, if I may.

The Court: I wish you would.

Mr. Freeman: Mr. Sweatt has stated in answer to your question they were on the market or had come out shortly prior to the issue of the Cross patent. Now, the Cross
813 patent was applied for in 1926 and what Minneapolis-Honeywell did was some time subsequent to 1926, but still prior to the issue of the Cross patent, and Mr. Sweatt further stated—

The Court: They did what?

Mr. Freeman: They did come out with a specific control adapted for doing this job and this job alone.

The Court: He said before he heard of the Cross patent.

Mr. Freeman: That is correct.

The Court: Doing what job?

Mr. Freeman: Doing the job of a hold fire, maintaining the combustion, proper combustion in the furnace, so that the fire would not go out when the room thermostat did not call for heat on a warm or mild day.

The Court: Regulated by the temperature or by this appliance?

Mr. Freeman: That is correct.

What Mr. Sweatt said is that his company came out with a specific control to do a specific job. I do not think he intended to say they were making this for a long period of time. They had made temperature controls.

The Court: But I did understand him to say they
814 had perfected the appliance and had brought it out before he ever heard of the Cross patent.

Mr. Freeman: That is correct.

The Court: I want to find out why he would take the Cross patent.

Mr. Freeman: You can answer that question.

The Witness: A. Because the moment we sold those devices with wiring diagrams and so on to apply to a stoker control for this purpose we felt that came under the claims of the Cross patent.

The Court: You believed that?

A. We believed that came under the Cross patent.

Q. And you were not permitted to sell any more of those appliances in connection with the heating control system, in connection with the stoker, because it might violate the Cross patent?

A. If our opinion was correct, yes.

Mr. Freeman: That is our position, speaking for the Minneapolis-Honeywell Company.

The Court: Q. Is it possible that patent, that is, one man has a patent on an appliance and somebody else can come along and aggregate that and say you can't use your patent appliance because I have a patent which now consists of a combination of these different things?

815 Mr. Freeman: Let me say this—

The Court: Isn't that about where we are in this lawsuit?

Mr. Freeman: Yes.

The Court: Is that the law?

Mr. Freeman: Yes, sir.

The Court: We don't have to go any further. You can argue that a little later as the law that comes within this lawsuit. I can't understand that to be the law.

Mr. Stone: May I explain one thing? You understand the Minneapolis-Honeywell brought out this specific control for this specific purpose prior to the date of the Cross patent, which was in 1930 and does not indicate anything as to who was the originator of the system or why they brought out the control prior to that time. You see, Mr. Cross, the inventor, filed that patent application back in 1926. They had taken their invention and put it on the market.

The Court: What did their invention consist of?

Mr. Stone: It consisted of the subject matter which you find in the claims of the Cross patent.

The Court: That is a combination of a lot of things?

Mr. Stone: That is right.

The Court: Including this appliance we are talking 816 about?

Mr. Stone: You understand the patent on the Victrola was a combination that was made from a lady's needle and a piece of wood. Mr. Edison was sitting at his desk with a needle and a piece of wood. He was scratching that needle on the wood. He noticed when he ran down the same scratch it would reproduce the sound exactly each time. That was the basis. The claims were drawn around the combination of a needle—and they didn't use wood,

they used a plastic of some sort that became a record. So the two elements of the claim were old, and that was one of the greatest inventions we have.

What I am trying to make clear is the Cross people back in 1925 or 1926, whenever they made this invention, conceived the manner of how to function a furnace and they immediately put on the market a type of patent application and it took the patent office four years to decide before the patent was issued. In the meantime we knew about the invention, knew about its manner of control, that it would successfully operate. It was during that period—.

The Court: Q. Does this appliance operate without any connection with the Cross patent?

A. No, sir.

817 Q. Before you ever heard about the Cross patent your invention was—

A. I didn't say the Cross invention.

Q. The Cross invention?

Mr. Stone: He didn't say that. There is a distinction. Isn't that correct?

The Court: Q. You were patented or had perfected this appliance before you ever heard of the Cross invention?

A. That is correct, but that does not mean the Cross invention did not precede our work on it. It did, because their dates go back to 1925.

Q. You worked on it and didn't know anything about it?

Mr. Stone: I wanted to make another point.

The Court: If we are getting to the point where we are going to argue this question of law, we will get to that later on.

Mr. Stone: All right.

The Court: I don't want to interfere.

Mr. Freeman: Q. Did your company pay for any of the fees or costs in connection with any of the litigation brought by the plaintiff Mid-Continent Company against Smith in Kansas City?

A. It did not.

Q. Did you direct that litigation in any way?

818 A. In no way.

Q. What was the relationship with Mid-Continent during the last ten years?

A. Our relationship has been purely the relationship of a licensee.

Q. Your interest has followed those of a company that was paying money for certain rights that you had purchased?

A. That is all.

Mr. Freeman: That is all.

*Cross-Examination by Mr. Stone.*

Q. In 1933 or 1934 Mid-Continent brought suit against a man named Schermes down in the Missouri District Court, the Federal Court. Did Minneapolis-Honeywell have anything to do in directing that suit?

A. It did not.

Q. I want to read an answer made by Mr. Courteol yesterday. This statement is not very clear. I think, however, the pertinent part is rather clear. Starting in the middle of the sentence: "in fact, it (referring to Mid-Continent) was being pressed at them—" I suppose it was pressed at them, at Mid-Continent— "by their 819 licensor—" it should be licensee, that would be the Minneapolis-Honeywell— "to get the Mercoid Corporation lined up, that they (Mid-Continent) had no choice in the matter other than force us to take a license."

Can you comment upon that for us in relation to certain negotiations that occurred in 1940? Would you like to see it? (Handing transcript to witness.)

A. We put no pressure whatever on Mid-Continent I know of.

Mr. Stone: That is all.

Mr. Moore: No cross.

(Witness excused.)

Mr. Freeman: As far as Minneapolis-Honeywell is concerned, we are through. We rest.

The Court: How about you, Mr. Stone? Are you ready?

Mr. Stone: Yes.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

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I, Kenneth J. Carrick, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages contain a true copy of Volume one of the printed record, printed under my supervision and filed on the seventeenth day of July, 1942; which together with Volume two; certified herewith under separate certificate, constitutes the record in the following causes:

Mid-Continent Investment Company and Minneapolis Honeywell Regulator Company,
*Plaintiffs-Appellants,*

No. 8008 *vs.*

The Mercoid Corporation,
*Defendant-Appellee.*

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Mid-Continent Investment Company and Minneapolis Honeywell Regulator Company,
*Plaintiffs-Appellees,*

No. 8009 *vs.*

The Mercoid Corporation,
*Defendant-Appellant.*

as the same remains upon the files and records of the United States Circuit Court of Appeals for the Seventh Circuit.

In Testimony Whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this 22nd day of April, A. D. 1943.

Kenneth J. Carrick,
(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*